

**THE
RAILWAY GAZETTE**

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DIESEL RAILWAY TRACTION SUPPLEMENT

The April issue of THE RAILWAY GAZETTE Supplement, illustrating and describing developments in Diesel Railway Traction, will be ready on April 1, price 1s.

TO CALLERS AND TELEPHONERS

Until further notice our office hours are: Mondays to Fridays, 9.30 a.m. till 5.30 p.m.

The office is closed on Saturdays

ANSWERS TO ENQUIRIES

By reason of staff shortage due to enlistment, we regret that it is no longer possible for us to answer enquiries involving research, or to supply dates when articles appeared in back numbers, either by telephone or by letter

ERRORS, PAPER, AND PRINTING

Owing to shortage of staff and altered printing arrangements due to the war, and less time available for proof reading, we ask our readers' indulgence for typographical and other errors they may observe from time to time, also for poorer paper and printing compared with pre-war standards

Four Losses to Railways

THE month which is now ending is marked by the loss of four well-known railway personalities, each outstanding in his own way. We recorded last week the death on March 18 of Mr. Joseph Harrison, who was stationmaster at Euston, L.M.S.R., since 1937, and was widely known. Last week-end it was announced that Mr. J. R. C. Williams, who has been Stationmaster at Paddington, G.W.R., since the beginning of 1931, is to retire at the end of this month. Mr. Williams, who also enjoyed a wide popularity, had been a stationmaster for 41 years, and is not only the senior G.W.R. stationmaster, but is also senior to his colleagues of the main London termini. There will be many who will wish to join with us in extending good wishes for a long and happy retirement to Mr. Williams. The death on March 21 at the age of 84 of Mr. Oliver Bury, who retired from the board of the London & North Eastern Railway Company last November, ended a long life of service to railways at home and abroad. The fourth personality whose loss we have to record is Mr. John Marchbank, who for ten years from 1933 was General Secretary of the National Union of Railwaymen, and who died on March 23 at the age of 63. Mr. Marchbank has been a keen railway trade unionist since 1906, in which year he became a member of the old Amalgamated Society of Railway Servants. He held a number of important offices with the N.U.R. and for many years his genial personality was well-known at all railway wages discussions. In 1943 he joined the board of British Overseas Airways Corporation.

Mr. L. St. L. Pendred

On Monday next Mr. Loughnan St. Lawrence Pendred, who has been Editor of our contemporary, *The Engineer*, for 40 years, is retiring after having been with that newspaper for 50 years. Mr. Pendred succeeded as Editor his father, the late Mr. Vaughan Pendred, who had himself been Editor of *The Engineer* for 40 years. The family tradition of the paper is to be continued, and his son, Mr. Benjamin Pendred, is to succeed him. Two Pendreds having occupied the editorial chair for 80 years, there will be many who will share our hope that the third member of the family will complete the centenary. Mr. Loughnan Pendred obtained his technical education at the Central Institution, South Kensington, and the Finsbury Technical College; the successor of the former is the City & Guilds (Engineering) College, which has been responsible for the training of many outstanding contemporary engineers. His apprenticeship was served with Davey, Paxman & Co. Ltd., and later he went to the works of Van den Kerchove at Ghent, and on to the old Western Railway of France. On his return to England in 1893, he joined the ordnance department of Sir W. G. Armstrong, Mitchell & Company at Elswick. He joined *The Engineer* in 1896, and has guided his newspaper through two great wars, as well as the depression years of the early 'thirties. In congratulating Mr. Pendred on his long and successful period of office, and extending our wishes of a happy retirement, we would accord to his son the hope that he may emulate the achievements of his father.

The Case for Nationalisation

In last week's issue of *John Bull* the Editor mentioned that no part of the Government's programme had come in for more criticism than the policy of nationalising some of the basic industries and biggest commercial undertakings, and suggested that the vigour of the opposition made the ordinary man wonder whether nationalisation is really in the public interest or merely an obsession rooted in the doctrines and theories of the Labour Government. He then claimed that Sir Ronald Matthews, Chairman of the London & North Eastern Railway Company, provided the best possible argument for nationalisation in his speech to stockholders at the recent annual meeting by making it clear that their interests came first, and furnished the chief, almost the only, objection to State ownership. This is a travesty of Sir Ronald's speech. His references to the interests of stockholders occupied less than one-tenth of his remarks on nationalisation. After saying that he had no information as to the Government's intentions as to compensation, he assured stockholders that, if the railways were nationalised, the directors would use every means in their power to secure a fair and equitable settlement. Surely no Chairman of a great public

undertaking could have taken any other line! *John Bull* omits to make any reference to the fact that Sir Ronald then stated that, while he was unable to criticise the financial effects of railway nationalisation, he felt no such inhibitions as to the practical or operational angle. After pointing out that he had yet to find, in the railway world, one instance where a transfer from private to public control had effected financial or operational improvement, he dealt fully with the insidious political propaganda in certain quarters and challenged the Government to appoint a commission of inquiry to establish whether private enterprise or nationalisation would best serve the public interest. Finally, he expressed his own view that it is folly for the Government to experiment with the organisation of well-tried institutions which have proved their ability to meet national needs to the full in peace and war.

Overseas Railway Traffic

Buenos Ayres & Pacific receipts have declined in the two weeks under review, the decrease totalling ps. 76,000. On the Buenos Ayres Great Southern there was a fall of ps. 129,000 in the thirty-sixth week, but a gain of ps. 825,000 in the thirty-seventh week gave a net increase for the fortnight of ps. 696,000. Central Argentine receipts have gained ps. 743,767 and Buenos Ayres Western ps. 111,000 in the fourteen days under review. Argentine North Eastern traffics arrested previous declines with an improvement of ps. 28,700 in the thirty-seventh week, but are ps. 15,200 down on the aggregate. Comparative figures are shown in the following table:—

	No. of week	Weekly traffics	Inc. or dec.	Aggregate traffic	Inc. or dec.
Buenos Ayres & Pacific*	37	2,582	- 68	83,590	+ 4,471
Buenos Ayres Great Southern*	37	4,781	+ 825	129,664	+ 6,660
Buenos Ayres Western*	37	1,284	+ 95	44,622	+ 2,662
Central Argentine*	37	3,446	+ 515	116,241	+ 9,011
		£	£	£	£
Canadian Pacific	10	1,145,000	+ 1,400	14,446,400	- 242,200

* Traffic returns in thousands of pesos

Canadian Pacific receipts gained £26,000 in the ninth and tenth weeks.

South African Railways Mission Tour

A very intensive tour of the British railway system is being undertaken by Mr. D. H. C. du Plessis, Chairman, and the other members of the South African Railways & Harbours Overseas Mission which arrived in this country on March 5. Some details of the Mission and its work, including a list of members of the Mission, was given in our March 15 issue. As from March 25, members of the Mission are visiting all the principal British railway centres, and the arrangements made so far extend up to April 19. The tour commences with a visit to Bristol and ends with the return of the members to London from York. The members of the Mission will divide among themselves the various aspects of British railway operation which they wish to study, and in this way it is hoped that a more intensive investigation will be possible during the time the Mission is in this country. It is the intention of the Mission to use the information so gained to assist in formulating a long-term policy for railway development in South Africa.

Indian Railways Budget

Plans for improving the amenities of travel in India, particularly in the inter and third classes, and for staff welfare, were announced by Sir Edward Benthall, War Transport Member, when presenting the Railway Budget to the Indian Legislative Assembly (reported in our Overseas columns this week). Some of the schemes were not likely to be remunerative, and it had been decided to follow the best railway practice in other countries by financing them out of revenue. For this purpose a betterment fund would be instituted by transferring Rs. 12 crores from the railway reserve and allocating Rs. 3 crores from the net revenue for 1946-47. The gross traffic receipts for the latter period were estimated to be Rs. 48 crores below the current year, in which peak traffic receipts of Rs. 225 crores were expected, and Sir Edward Benthall gave the warning that future tendencies were likely to be downward rather than upward. It might well be necessary to give serious consideration to the linked problems of the levels of rates and fares, the price of coal, and the level of wages.

A Successful Transport Social Event

So far as we could hear, there was no dissentient voice in the chorus of praise for the success of the first post-war dinner of the Institute of Transport, which was held at the Connaught Rooms, London, on Wednesday of last week, and struck a new note inasmuch as a toast list was avoided and the function was left entirely as a social evening. The chair was occupied by the President, Sir Frederick Handley Page, who greeted "The Guests" in a typically light-hearted and humorous way and indulged in a number of oblique references to the dawn of Utopia, once the programme of nationalisation of essential services by the present Government had been carried through. The two principal guests were the respective Parliamentary Secretaries of the Ministry of Transport (Mr. G. R. Strauss) and the Ministry of Civil Aviation (Mr. Ivor Thomas), and both replied to the thrusts in a similar light way.

Nationalisation Forecasts Criticised

When Mr. G. R. Strauss, Parliamentary Secretary, Ministry of Transport, spoke on the Government's transport nationalisation proposals to the Mansion House Association on Transport last week, several of his comments evoked critical retorts from his audience. As reported elsewhere, his statement that "something had to be done about transport" was immediately challenged with cries of "Why?," and his tribute to the enterprise of the transport industry led Sir Patrick Hannon to rejoin that the Government must not cripple that spirit of enterprise by interfering with what had been such a great success during and before the war. Maintaining that the Government's action in rushing headlong into nationalisation was something like a political crime, Sir Patrick inquired whether anyone suggested that the railway industry had not discharged its function. Mr. D. McA. Eccles, of the Mansion House Association Parliamentary Committee, took Mr. Strauss to task for throwing bouquets at transport for its achievements under private ownership, and then wanting to take it over. Further, said Mr. Eccles, Mr. Strauss had tried to raise a cheer by talking of taking off restrictions, a procedure which Mr. Eccles found comparable in present circumstances with the privileges commonly allowed to a condemned man in respect of his last breakfast.

Rail Welding in Victoria

On many occasions in pre-war years we have recorded the pioneer work of the Victorian Government Railways (Australia) in the use of long welded rails. The usual length of welded rail for general service on the Victorian Railways is 270 ft. The welds are made in the workshops by the flash-butt process and to date some 128,000 welds have been completed, equal to 430 miles of track. For transport purposes the welded rails are loaded into six "Q" trucks and are unloaded by means of ropes over the sides. The longest welded rails on the Victorian Railways, and probably ranking among the longest in the world, are the two lengths of 4,748 ft. and 4,321 ft. on the Geelong line. These rails were first Thermit welded into lengths of 225 ft. outside the track and were again Thermit welded together on the site.

An Atlantic Coast Merger

A new proposal has now been made by the Atlantic Coast Line Railroad of the United States in its endeavour to bring about a merger with the Florida East Coast. At present there are two main routes between the north-eastern states and Florida—the Seaboard Air Line and the Atlantic Coast Line. The former has its own trackage throughout from Richmond, Virginia, southwards to both coasts of Florida; the Atlantic Coast Line runs from Richmond to Jacksonville, Florida, and from there to Miami its trains are worked for 366 miles over Florida East Coast metals. North of Richmond both systems are connected with the Pennsylvania and Baltimore & Ohio lines at Washington by the 117-mile Richmond, Fredericksburg & Potomac Railroad, in which the S.A.L., A.C.L., B. & O. and Pennsylvania are jointly interested. Acquisition of a controlling interest in the Florida East Coast would put the Atlantic Coast on the same footing as the Seaboard Air Line, as regards north-south through traffic, and would greatly simplify

the working through Jacksonville. The Atlantic Coast would give an undertaking to continue all through operation at Jacksonville of services from the Seaboard Air Line and the Southern Railway to points on the Florida East Coast railway system.

Conference on Industry and Research

Scientific research is essential to industrial expansion. This fact was appreciated in this country during the first world war, when the Department of Scientific & Industrial Research was established to accelerate the introduction of research into industry, and since then valuable work has been done by various research associations and by firms which have established their own research laboratories. The continued prosperity of almost any industry today is dependent to a large extent on the maintenance of the quality of its products and the ability to improve on their quality. In the case of the export market, particularly, quality becomes a factor of national importance, even more so these days, when we are embarked on the difficult task of recapturing our pre-war markets and also endeavouring to invade new industrial territories overseas. These and other problems associated with scientific research in industry were discussed at the conference held under the auspices of the F.B.I. in London this week. In the papers read at the conference, which will be dealt with in a later issue, emphasis was laid on the necessity for close working between the industrialist and the scientist, since neither could of himself visualise all possibilities.

Machine Tools for Industry

The plans of the Government for disposing of its surplus machine tools to industry were summarised by Mr. S. F. Steward, Director-General of Machine Tools, Ministry of Supply & Aircraft Production, in a speech to the Council of the British Engineers' Association on March 14. A pricing policy had been fixed, he said, which made generous allowance for depreciation of standard British machines, together with a further reduction to ensure that the final price was attractive. American machines, most of which were acquired by a favourable purchase agreement at the end of 1944, were having their prices based on an equivalent British machine where this existed. As examples, Mr. Steward quoted a British high-power boring and turning mill, priced new at £1,240, and now offered at £616; and an American radial arm drilling machine, costing £1,050, being offered at £510. Machines were offered first to holding contractors, and then to the incoming tenants of factories where they were situated. The remainder were disposed of at sales in the factories, or through the disposal centres. Purchasers were required to undertake to use the machines for their own purposes in Great Britain, and not to re-sell them for twelve months.

New Electric Locomotive Types in the U.S.A.

Some new developments in electric motive power are reflected in locomotives which are now under construction for American railways. The Virginian Railways, which are occupied almost entirely in coal haulage between the Virginian coalfields and the Atlantic seaboard at Sewall's Point, and which move the coal in trainloads of exceptional weight, have on order four motor-generator type locomotives, each consisting of two units of the B-B + B-B wheel arrangement, and carrying the record adhesion weight of 446 tons on the 16 driving axles. They will be rated at 6,800 h.p., and will operate from overhead conductors at 11,000 volts, 25 cycles, single-phase. Driving cabs will be provided at both ends. The Virginian is noted for its use of 12-wheel coal wagons with capacities up to 125 tons (107 tons of 2,240 lb.), and has operated single-headed train loads up to 16,000 tons; trains up to 10,000 tons weight are not uncommon over this main line. For its electrified section through the Cascade tunnel, from Wenatchee to Skykomish, the Great Northern Railway has ordered two electric locomotives which, it is claimed, will be the largest and most powerful single units yet built. The wheel arrangement is 2-D-D-2 and each will weigh 321 tons.

Eire Railways To Go Diesel-Electric?

A CRITICAL wartime fuel position, described in vivid detail by Mr. A. P. Reynolds, Chairman of Coras Iompair Eireann (Irish Transport Company) in his speech at the annual meeting of the company on March 14 (see page 360) has been behind the formation of ambitious plans for widespread adoption of diesel-electric motive power. At one time in the war years, the quality of coal was so bad that no train would run for more than thirty miles without having the firebox cleaned out and the fire re-lit. Urgent investigations showed that the most satisfactory substitute for coal was briquetted fuel, and the company was able to procure the necessary plant and supplies of pitch just in time to avert a complete cessation of train service. By that time coal stocks had got so low that notices announcing a suspension of service had actually been printed and were ready for publication. The present diesel-electric proposals, said Mr. Reynolds, were part of a scheme for a re-distribution of traffic between rail and road in which many branch lines would be closed and railway passenger travel would be mainly over long distances in fast and comfortable trains, all of which would probably be hauled by diesel-electric locomotives.

Mr. Reynolds announced that, in addition to orders for shunting, goods, and passenger diesel-electrics from Great Britain and Switzerland, the company was importing diesel-electric power units for locomotives of which the chassis would be built and erection carried out at Inchicore. If the experiment was successful, complete diesel-electric locomotives would be manufactured in Eire, and modern engineering shops for this purpose would replace those in which steam locomotives were built and maintained at present. Land had also been acquired at Limerick for wagon-building shops, and the company, in association with Imperial Chemical Industries Limited, had designed a wagon made partly of aluminium and partly of aluminium alloys which would be lighter and cheaper to maintain than existing wooden types.

In concluding his review of the comprehensive development programme decided upon by the company in its first year of operation, Mr. Reynolds looked at other aspects of the future, particularly competition from private carriers. After careful consideration, the board has decided to meet the position by reducing rail and bus fares, and by a revised and cheaper rates classification. This is estimated to cause a reduction in gross revenue on a full year of three-quarters of a million pounds, and will necessitate substantial economies, but the directors feel that despite the risk the measure is in the best interests of the company.

Wanted—A Railway Policy

ON page 341 of this issue we publish a provocative article by a correspondent on the question of the attitude of the railway companies towards the proposed nationalisation of transport as outlined by the railway Chairmen at the recent annual meetings. He criticises the Chairmen for basing their case for the retention of private ownership on the good work done by the four companies since their formation and especially on their wartime achievements. They took this line, however, because of the statement made by the Lord President of the Council in August last that there was only one justification for either nationalisation or private ownership, efficient service in the national interest, and that if private enterprise could give this it should be allowed to remain.

The Chairmen's contention is that the efficient service rendered to the nation by the railways in peacetime and under wartime conditions adequately justifies their continuance under private enterprise. As to his remarks as to the establishment of one central administration dealing with large questions of principle and speaking for the railway industry as a whole, we do not agree that this would necessarily involve the re-constitution of the four undertakings. The Railway Companies' Association is already in a position to speak on behalf of the railways as a whole and, if considered desirable, presumably it would not be difficult to enlarge its functions. With regard to the suggestion that the four railway groups should be amalgamated, the opinion is widely held that a rail-

way organisation larger than, say, the L.M.S.R., would have disadvantages from the point of view of control.

So far as the investigations made on behalf of the Railway Companies' Association are concerned, these covered many phases of railway operation, and the conclusions reached will be of considerable value to the companies when the time is opportune for their adoption. Until then, little purpose would be served by publicity. We agree with our correspondent's views on the probability of working expenses increasing and traffic receipts diminishing, and of the necessity for combining greatly improved services with the strictest economy in operation. For this reason it is reasonable to assume that the inter-company freight rolling stock control, which enabled substantial economies in empty wagon mileage to be effected during the war, will be continued, but until the future ownership of requisitioned privately-owned wagons has been decided it is obviously impossible for the companies to frame concrete plans. On the question of the standardisation of rolling stock and other equipment, we are glad that our correspondent includes the word "judicious," as we fear that complete standardisation might tend to stultify improvements.

As to passenger fares, although we agree with the view that it is unnecessary and probably undesirable to restore the scores of cheap travel facilities which were in force pre-war, we feel that there is still a case for granting a limited range of cheap fares to stimulate travel during off peak periods, as soon as the necessary coaching stock and locomotives become available. The suggestion that the travel organisations and the holiday and health resorts can be left to bear the greater proportion of the cost of fostering tourism is, we suggest, ill-founded, judging from past experience.

The principal problem to be solved in connection with the co-ordination of transport in Great Britain, as our correspondent suggests, is that of freight traffic. Through the medium of the Road & Rail Central Conference, the railways and the road haulage interests have carried out a good deal of exploratory work into the many detailed questions which arise, but the main difficulty hitherto has been the absence of any central body which could speak on behalf and secure the adherence to agreements, of the very large number of road haulage organisations and hauliers. The formation of the National Road Transport Federation at the beginning of 1945 has facilitated the consideration of fundamental points at a high level, but no official announcement has yet been made as to the progress which has been achieved, doubtless because of the many conflicting interests which arise. We are inclined, therefore, to agree with our correspondent's final contention that the announcement of a comprehensive rail-road policy, agreed by railways and road interests, would be far more likely to gain public sympathy and support than a mere negative attack on the principle of nationalisation.

The Bourne End Derailment, L.M.S.R.

THE derailment at Bourne End, L.M.S.R., on September 30, 1945, for several reasons attracted more than ordinary attention. The death roll of 43, including driver and fireman, was unusually heavy, the heaviest in Great Britain since the exceptional troop train accident at Gretna on May 22, 1915. Many derailments have taken place as a result of excessive speed, or from other causes, and have been accompanied by surprisingly few casualties. In this case the engine, in overturning, rolled down a bank and apparently slid along its side in a field, resulting in six out of the seven leading coaches being piled up and destroyed. The great damage suffered by the train and the casualties—there were 64 cases of serious injury—naturally made the accident the subject of much discussion and led to numerous suggestions for preventing similar occurrences.

Sir Alan Mount's report on the case has now appeared. It is of some length, but its essential details are reproduced in our summary appearing on page 357. As there was no substantial conflict of evidence on any material point, although that dealing with the effect of the sun on the sight of the signals involved some opposing views, the principal part of the report is that dealing with the signalling and the recommendations arising therefrom, which are of especial interest to operating officers and signal engineers. There was no failure of signalling equipment, nor other failure that could

be ascertained, neither did any signalman commit an error. The central and very serious element in the accident was the failure of a most competent and experienced driver, accompanied by a capable fireman, to act upon the indications of a colour-light, distant signal, the meaning of which he was perfectly acquainted with. As it is established that he took no action whatever, a discussion on the advantages of some aspect other than the one actually displayed, though necessary and following naturally from the circumstances as a whole, seems to us to lose much of its importance. When a perfectly distinctive warning aspect is not heeded in the least, as if it had never been seen, it is difficult to see why some other aspect is thought likely to have been more effective.

As we see it, we have to base our train operation on two things. Competent men on the footplate, and clear and appropriate signal aspects. Provided our aspects are reasonably consistent and drivers are thoroughly instructed about them and their use at the various locations, we think that ordinary operating requirements may be regarded as met. Total disregard of signals nobody can cater for, short of a very complete automatic train control system being adopted, and we are likely to have to wait a long time for that. We stress the question of instruction, as we have so often heard speakers at technical meetings affirm that drivers do not understand the meanings of the various signals, that we are tempted to wonder who is responsible for their training.

The L.M.S.R. for some time has been installing colour-light distant signals on its main routes, as the old semaphores called for renewal, with very satisfactory results. The power arrangements, proving and controlling circuits, and equipment generally, are of the most complete kind, and any possibility of a dangerous failure is thoroughly guarded against. No suggestion that there was any defect arose in this case. At crossover junctions like Bourne End, where many trains are regularly routed over the divergence, splitting distants have been used in the past, but were not pulled off for other than booked movements. With the colour-light distants it was decided to display double-yellow for the crossover route, as being a very clear and effective warning—with no green light in it, as ordinary splitting signals would have had—and to give it the meaning of restricted speed at the signal ahead. It is true that this is a different use of the aspect from that met with in plain 4-aspect signalling on a straight route, where the double yellow is a preliminary warning of yellow and then red, at that moment, but fundamentally the effect is almost the same, namely, that a fast running train must have its speed brought down at once, for if it is not in 4-aspect automatic signalling there is risk of the red being overrun.

There is, however, one essential difference between the two cases. Under 4-aspect automatic signalling a driver knows that the conditions ahead may, and often most probably will, change for the better before he gets to the succeeding signals, and he may be tempted not to reduce speed so much at once in consequence. Approaching a location like Bourne End, and seeing the double yellow, the driver knows for certain, if he is fit to be on the footplate at all, that a speed reduction is called for most positively and that the conditions in advance cannot change for the better but must remain as they are until he has cleared the location. It seems to us therefore that this aspect was not an unreasonable one to use, again assuming drivers to have been thoroughly instructed about it, while agreeing at the same time that real inconsistency in signalling is decidedly to be avoided. It avoided introducing another aspect, and over-multiplication of aspects is undesirable. If a distinctive distant indication is wanted for these junction diversions, a very good one would be, we think, to keep the double yellow, but to flash the lights alternately. Flashing would then invariably denote a divergence.

As was to be expected, automatic train control is mentioned at some length in the report. Sir Alan now recommends that the railways review the whole question, with the object of initiating the introduction of warning control on the main lines, stipulating that the equipment will have to be designed to conform to multiple-aspect signalling and that no audible "clear" signal must sound on the engine if speed is to be reduced. While such control is no cure for every trouble to which train running is liable, there is, as the report says, no means of knowing what mistakes it has rectified, and it would bring appreciable benefits in other ways.

Wanted—A Railway Policy

(From a Correspondent)

YOU record in your issue of March 15 the decision of the main-line companies to challenge the Government's proposal to nationalise the railways. The case put forward by the Chairmen to their stockholders for retaining private ownership was based on the good work which the four companies have done in their respective spheres since their formation, and especially on their wartime achievements. There was never a hint that the companies had any plan, or saw any need, for reconstituting their four undertakings so as to have one central administration dealing with large questions of principle and speaking for the railway industry as a whole. This central body would guide the trend of railway development in every part of the country and would direct a drive for efficiency and economy of operation, while keeping clear of detail.

The portents are that all public utilities in future will have to work on these lines. Nationalisation, as the Labour Government construes the term, is simply a tool for bringing about such a structural change in any industry. In the case of the railways there would be unification in the place of the grouping brought about by the Railways Act, 1921. As the public has been told repeatedly that grouping has been a success, it will not be alarmed by the prospect of the process of amalgamation being completed once for all. The people are becoming used to communal services being run by the State. The decision to take over cable and wireless services might have been made by any Government after consultation with the Dominions. The State already has widespread interests in telecommunications and, when a change in ownership of overseas facilities comes about, the public is not likely to suffer. Neither is there room for indignation about air transport becoming a national service. Everywhere the growth of civil aviation depends on State subventions, direct or indirect. Even in America air lines cannot fly by themselves and the spread of air travel depends on how many millions of dollars the taxpayers are prepared to find for airfields and the equipment of air routes. The British public will not concern itself about the Government controlling air transport unless the cost falling on the Exchequer becomes excessive.

In the new political and economic atmosphere that surrounds us, there can be no standing on ancient ways. Two or three years ago the Railway Companies' Association appeared to realise that a new technique would be required in the after-war period. Wiseley it appointed inter-company committees to examine most branches of railway business and suggest measures for the future conduct of affairs. No report of progress has been published. Presumably the inquiries have been side-tracked because each company was more concerned with preserving its own identity and its pet crochets than with the commonweal. Yet the companies must have learned a great deal from the events of the last six years, when the main-line railways were operated to some extent as one system. It is understood that commercial considerations and old-time prejudices were set aside so that traffic could be worked by any route which happened to be capable of carrying it. Again, the distribution of wagons, containers, sheets, and ropes by an inter-company rolling stock control saved what would have been a dangerous situation if peacetime methods had been perpetuated. The war also gave the railways a chance to show how coal, coke, iron ore, and limestone could be handled efficiently without the use of private-owners' wagons, whose manipulation added to the expense of working in normal times. The requisitioning of these traders' wagons made it possible to run thousands of train-loads through to nominated destinations from the collieries and iron ore or stone mines. Through locomotive working was another means of saving time and motive power.

The railways cannot afford to discard the advantageous practices which helped them to pull through the critical war years. The increase in the current wages bill must be 80 per cent. at least on the 1938 figure; the high price of locomotive coal is not likely to be lowered when the mines are nationalised, and steel and most materials will cost more than they did pre-war. Working expenses will therefore be far above the old levels. On the other side of the account, traffic receipts

are bound to droop as industry returns to a peacetime footing and competitive transport services are restored. The apparent prosperity of the railway undertakings during the period of Government control has been artificial. There may soon be a railway deficit. If the railways are to hold their own in the after-war world, they will require to combine greatly improved services with the strictest economy in operation—using economy to denote larger savings such as would flow from a judicious standardisation of rolling stock and other equipment. It will also be necessary for them to adjust their commercial outlook to the new environment in which they will be working. The waters are out and old precedents will be of no avail in wrestling with the problems about the conveyance of both passengers and merchandise that are ripe for solution. Let us see how the land lies.

The whole field of passenger travel offers wonderful scope for an investigating committee composed of the younger generation of railwaymen, not hidebound by long-established routine. In some quarters it is assumed that the numerous concessions in passenger fares, which were in force before the war, will be revived in due course. There does not seem to be a shred of a commercial case for any such action. The public should be given a good railway service and should pay an appropriate price for it. With the higher level of remuneration now prevalent in industry there is no longer the same call as of old to tempt people to travel by reducing ordinary fares. Experience at home and abroad shows that the public will not grudge supplementary charges for exceptional facilities like Pullman cars, sleeping berths, and high-speed trains with luxurious accommodation. Little publicity is needed to ensure that the crack expresses are filled to capacity, and much of the pre-war expenditure on passenger advertising might be scrapped with impunity. Good service is a sufficient advertisement for the railways. The travel organisations working under Government auspices, with our holiday and health resorts, can be left to bear the great proportion of the cost of fostering tourism. In the past the railways have not taken sufficient pains to calculate the quantum of their net passenger revenue. Services which do not pay should be eliminated ruthlessly when alternative means of transport are available.

Even more important is the question of developing freight traffic. After six years of deliberating the Road-Rail Conference should be able to agree on lines of demarcation between the two forms of transport which will leave short-distance traffic to road as a general rule and keep the bulk of long-distance traffic to rail. The second problem before the Conference is to fix relations between road and rail rates, which neither set of carriers would be free to tamper with at their own pleasure. A stop should be put to the perpetual reductions in transport charges which have been arranged in the past with the ostensible object of meeting competition, or assisting the trade of particular districts, or furthering the schemes of individual industrialists. Frequently the quotation of lower rates by a carrier in one region led to cutting elsewhere, and the general level of charges on some commodities was lowered without regard to the effect on net transport revenue. The fresh principles which the Government is seeking to lay down for the distribution of industry conflict with the so-called flexibility in fixing rail rates to meet local conditions. Neither can the railways expect to be at liberty to wage a rates war against improved roads and bridges which the authorities may build to ease the path of motor transport. All these points and many more, such as the question of continuing the system of "agreed charges," will surely have been thrashed out by the Road-Rail Conference. It is high time that we had at least a broad outline of the new rates machinery suggested by that body.

Railways are closely entwined with the life and work of the people of Great Britain. The companies would not lack supporters if they were ready with a comprehensive policy designed to vitalise their methods of management, to cut out dead wood and duplication of effort, and to end the road-rail controversy of which the country is tired. Without such a policy it is difficult to see how the companies can oppose effectively in Parliament the concept of nationalisation as a cure for all transport ills or be instrumental in modifying the clauses of the bill which the Prime Minister stated on March 18 will be introduced in an early session.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

The Running Man's Ideal Locomotive

P.O. Box 546, Haifa,
Palestine. March 11

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—There seems to have been a lull of late in the bar *versus* plate frame controversy, and so it is good to see Mr. Graeme championing the former with no uncertain voice. [See our February 8 issue.—Ed. R.G.]

In 22 years' close connection with the bar frames of fifty Baldwin 4-6-0s of 1918 build and a small number of Borsig 2-8-0s of 1914, I can recall only one broken frame. That was at the "weak" front end; and why shouldn't it be "tender" front end? Surely that was one of the things the designer had in mind; and if he couldn't honestly take to himself the credit, at least incidentally he must have saved many a pair of cylinders from destruction in collisions of medium severity. (The introduction of points of comparatively lesser robustness seems to have been neglected outside high-powered machine tool design. I can call to mind odd instances like the vee groove round the stool of a travelling oil tank in order to leave the bottom outlet valve intact in case the pipework gets carried away in a derailment, but there is lots of scope for extension of the principle).

The bar-frame fancier doesn't have to be told how simple it is to deal with the ordinary case of a bent extension frame, of course. As regards breaks, as I have indicated, I can't claim much experience. Rather naturally, I suppose, my solitary case occurred right next to the cylinder casting, and there didn't seem any way to make a job of an electric weld *in situ*, therefore. Obviously one couldn't remove the cylinders when there was otherwise no excuse for lifting the boiler, just in order to do a bit of welding, so the extension frame—it was the left side only—was cut behind the cylinder as far back as possible. This allowed the welding of the fracture on the bench; a simple and perfect job of the straightening in the smithy; and finally, full facility for a good weld of the voluntary amputation when set up on the engine. I would much sooner tackle a broken extension frame than some of the merely crumpled "tough" front-ends I've met on plate-framed engines.

Yours faithfully,

A. L. JONES

Italian Train Timings

Monkton Combe, near Bath.
March 15

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—You published in *The Railway Gazette* about a year ago details of the best passenger-train timings then operating in liberated Italy, and perhaps the following summary of best timings advertised in the March, 1946, timetable may be of interest:—

SUMMARY OF BEST PASSENGER-TRAIN TIMINGS, MARCH, 1946

Distance (Miles)	From	To	Route	Fastest timing Hr. Min.
415	Milan ...	Rome ...	La Spezia ...	20 50
430	Rome ...	Turin ...	La Spezia ...	22 05
167	Milan ...	Venice ...	Verona ...	7 40
301	Rome ...	Bologna ...	Falconara ...	14 35
134	Rome ...	Naples... ..	Formia ...	5 55
310	Rome ...	Bari ...	Formia, Aversa, and Foggia ...	16 00
296	Naples ...	Reggio Calabria	Paola ...	11 55
445	Rome ...	Venice ...	Falconara, Bologna	22 25
198	Rome ...	Florence ...	Pisa ...	14 00
196	Milan ...	Florence ...	Bologna ...	10 03

Since the liberation of Northern Italy last May, reconstruction of lines previously interrupted has continued, and, in many cases, has been completed to permit through running. For example, single-line bridges have been restored over the River Po at key points—at Ostiglia, Piacenza, and near Pavia; the East Coast main line between Ancona, Pescara, and Ortona was re-opened in June, and more recently the West Coast main line between La Spezia and Genoa was completed in February this year as a through link. The Apennine Tunnel was re-opened in May, but the direct line from Milan to Rome is opened for through traffic only as far south as Florence, being interrupted between there and Arezzo.

Electric traction has been restored on most of the lines in the north-west, and considerable re-electrification has been completed elsewhere: Brenner-Verona-Bologna-Vernio (20 miles north of Florence); Rome-Ancona, Naples-Foggia, Naples-Reggio Calabria, and Trieste-Tarvisio. South of the River

Po double main lines are the exception rather than the rule, due to war damage. Throughout the country there has been extensive restoration of signalling—semaphore of both manual and electric operation, and colour-light—with consequent benefit to train working. However, telegraphic block working is still quite general south of the River Po. Train services are sparse due to shortage of coaching stock and coal. On most main lines there is one through semi-fast (*Diretto*) passenger train daily, but owing to the lengthy stretches of single line, frequent speed restrictions, poor quality coal, and other factors, overall speeds are low.

Yours faithfully,

MILANESI

[We reviewed the December, 1944, issue of the Italian State Railways timetable in our March 2, 1945, issue, on page 218.—Ed. R.G.]

Lessons from Accidents

119, Norbiton Hall,
Kingston-on-Thames, March 11, 1946

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The fatal accidents which occurred at Haywards Heath on September 2 and at Bourne End on September 30, 1945, have many points in common. The most prominent feature is that they were both preventable. A Ministry of War Transport report on the Haywards Heath accident was made public in December. At the time of writing, over five months afterwards, no such report has been issued regarding the Bourne End accident. In its absence opinions could be formed which might be grossly unfair both to the Ministry and to the railway. The evidence taken at the public session of the inquiry is meagre, but is all that is available at the moment.

In both cases there is no evidence, nor is there any implication, that there was:—

(a) Any defect in the permanent way.

(b) Any defect in the rolling stock.

(c) Any failure in the functioning of the signalling equipment.

It would appear that in both cases the cause of the accidents was the failure of the human element. In all such cases the final responsibility for taking, or failing to take, appropriate action rests upon the driver of the train. Successful and efficient railway operation is very much a question of whole-hearted co-operation on the part of all grades of employees. It is a moot question whether more could not have been done to help the driver, who must, in addition to his normal arduous duties, do the right thing at the right time and at the right place as called for by special operating instructions.

Publication of Periodical Notices

An improvement could be made regarding the date of issue of periodical notices. They should be published in ample time for them to be fully studied and absorbed by those who must act on them. Many of these notices have to do with engineering works. These works have to be carefully planned, so there is no reason why an adequate period between publication and the carrying out of the work should not be included as part of the works programme. As most engineering occupations occur on a Sunday, notices should be in the hands of the operating staff *before* the previous week-end. In the case of Haywards Heath, the special notices were dated Thursday, August 30, and copies were available at the loco. depot on Friday, August 31. The accident took place early on Sunday, September 2. Comment on this short time interval would appear to be superfluous.

Issue of Periodical Notices

From the published report of the Haywards Heath accident it is evident that the driver had not obtained nor signed for a copy of the notice, and it did not appear to be anybody's business, even when time was so limited; to see that he got one. It was stated that the Inspecting Officer "agrees with the company's officers that a driver must be responsible for providing himself with, and studying copies of, weekly or fortnightly notices." This is rather an alarming statement as it encourages the putting of the whole responsibility and subsequent blame on the driver, and is hardly mitigated by the remarks which followed it. To use the vernacular, "the driver holds the baby."

It should be a definite duty of shed and depot staff to issue special notices to train crews as soon as they are available. It would be a worth-while safeguard to display on a notice board each day all temporary restrictions and alterations, such as those under discussion, in the area served by the depot, grouped according to routes and duties. In addition every driver (and guard) should be notified personally on the first day that any restriction affects his work. It may be argued that this would demand a lot of time and labour,

but this would be better than fatalities and would indicate an honest desire to make operation safer.

Control at the Site

There is an almost perfect means available for reminding a driver to take appropriate action at the right place and at the right time. The signal installation enables the signalman to have complete control in his own area over the movements of all trains. By means of the signals he can cause any train to reduce speed to such an extent as to ensure the safety of any subsequent movement, whether it is a normal one or an unusual one. This control could be ensured by two new rules in the book. The following are suggested for this purpose:—

Rule A: When a train is to be diverted from one running line to another and such diversion calls for a reduction of speed, the signals for the movement must be kept at "stop" until the necessary reduction of speed has been made.

Rule B: When a train is to be diverted from a running line to a non-running line and such diversion calls for a reduction of speed and/or instructions regarding the length of empty line ahead, the signals for the movement must be kept at "stop" until the speed has been reduced as necessary and is also such that the train can be stopped short of any obstruction. In addition the driver must be warned verbally from the signal box, if its situation permits, or by ground staff regarding such diversion and the point at which he will be required to stop.

Where track circuits are employed, approach locking might be used to co-ordinate the reduction of speed with the subsequent clearing of the signals. The application of Rule A would have prevented the accident at Bourne End, while Rule B would have prevented the one at Haywards Heath.

Signal Arrangements at Haywards Heath

It is unfortunate that at Haywards Heath the indications given by some of the signals were conducive to misunderstanding, and actually may have been the immediate cause of the accident. Surely a yellow arm and light for the normal or "stop" indication of signal 36 (siding outlet signal) is contrary to accepted practice? This yellow light preceded by a green one at signal 46 may have led the driver to think that he had a clear run through the station with a caution indication for the section beyond. Would it not be correct practice for signal 36 to have a red arm and to show a red light at normal, and for a red target and light to be shown permanently on the buffer stop? These, with a yellow instead of a green light at signal 46 for "proceed," would have counselled "caution" for the move into the siding. (See letter on "Subsidiary Signals" in your February 1 issue.)

Yours faithfully,

W. G. TYRRELL

[The above letter was written before publication of the report on the Bourne End accident. A summary of the report is on page 357 and an editorial on page 340.—Ed., R.G.]

Diesel-Electric Freight Locomotives

London, N.W.1. March 25

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—In your issue of March 22 you publish a vigorous retort from "Experimentia" to your comments on the subject of "Diesel Passenger Progress in the United States." Evidently he doubts whether more diesel streamliners will pay and he may be right. The U.S.A. railways are primarily freight carriers and the most remarkable development of diesel-electric locomotives recently has been their use for hauling heavy freight trains. In any American journal you can see pictures of a C. B. & Q. 5,400 h.p. diesel hauling a train of oil wagons through a deep canyon, or a 4,050 h.p. diesel assisting a Great Northern train of general merchandise over the Rockies.

Most of these machines have been put into main-line freight service since 1941. Their number is growing rapidly because they increase the capacity of the long stretches of difficult track that lie west of Chicago and the Mississippi. The diesel-electrics can be kept at work almost continuously—in contrast to the steam locomotive with its frequent stoppages for water and servicing. Their advent seems likely to put an end to main-line electrification in the States outside areas where traffic density is extraordinarily high.

That brings one to pose the question whether diesel-electrics might not be tried on the Manchester & Sheffield section of the L.N.E.R. before the company proceed further with the electrification scheme which was stopped half-way by the war. The company advertises that it is short both of locomotives and locomotive coal. Three powerful diesel-electrics might be obtained as part of its ordinary locomotive programme and would be sufficient for a trial. If it transpired that diesel-electric power would not give the efficiency and economy expected from electrical operation, the pre-war plan could

be resumed and the diesel-electrics used elsewhere. It is to be hoped, however, that the diesel-electrics would be a success, as their working could be extended to adjoining sections of the L.N.E.R. and L.M.S.R. Their operations are flexible: an electrified area is rigid and cannot be extended without additional capital expenditure.

As a last argument for an examination of the proposal, the case for electrifying the lines through the Pennines depends to a large extent on the constant flow of coal and coke from the Yorkshire coalfields to Lancashire and beyond. Who can tell how long the stream of mineral trains will continue at its present intensity? The N.E.R. electrified its Shildon & Newport (Middlesbrough) line in 1916 to serve the West Durham coalfield, only to have the L.N.E.R. find 20 years or so later that the closing of pits and other changes made it economical to scrap the installation and revert to steam working. The introduction of diesel-electrics would cut out the risk of a similar upturn on the Manchester and Sheffield section.

Yours faithfully,

DUNELMIAN

Seven Years Late

Launt House,

Workop, Notts. March 3

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—Adverting to the correspondence that appeared on page 214 of your issue of March 1, headed "Cures for Bad Time-Keeping," I am of the opinion that both your correspondents have little to complain of with the delay that they speak about. Have they ever heard of the train that arrived at its destination seven years late?

The story, which is authentic, took place on the Atchison, Topeka & Santa Fe RR., and commenced on September 8, 1900. The 11.30 a.m. ex-Beaumont (Texas), for Port Bolivar, 70 odd miles away, left to time and duly arrived at High Island, 33 miles, at 12.22 p.m. Here it was inundated by the waters of the Gulf of Mexico, which had flooded inland to a depth of nearly 40 miles. After some hours the passengers and crew escaped, but the train was left to its fate.

When the floods had subsided the railway company made an inspection and found that miles and miles of track had disappeared, and in fact the only track left was the portion upon which the 11.30 a.m. was still standing. For some reasons, probably financial, the train was left as a landmark for years, but eventually the track was connected to those rails that the train still stood upon.

After a quick clean up the engine was fired and moved her train of 4 cars onwards to its destination, where she arrived exactly 7 years late. The bulletin board at Port Bolivar Station had the time of her arrival and reason for delay chalked thereon, and the A.T. & S.F. RR. arranged for some of the original passengers to be present at the ceremony. The train should have taken 2 hr. 25 min. for the journey. I believe that the line that this took place on was originally the Gulf & Interstate Railway, but I am not aware of the exact date that the A.T. & S.F. RR. took the G. & I.R. over; it was somewhere in the first 10 or 15 years of this century.

Yours faithfully,

V. BOYD-CARPENTER

Cures for Bad Timekeeping

Headquarters, Small Arms Schools (I), Saugor,
Central Provinces, India. March 18

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—The late running statistics recently published make sorry reading to the enthusiast, but criticism at present would be unjust in view of phenomenal difficulties under which the railways are operating. I was surprised, however, that fog was given as a reason of delay on the G.W.R., in view of the audible cab-signalling system. I do feel, however, that, when conditions are more normal, the railways should aim at a far higher standard than existed before the war, which, apart from a few crack expresses, was not of a very high order.

I suggest the approach to the matter has been wrong. Why are trains up to 5 min. late dubbed as punctual as in the L.M.S.R. "On Time" campaign? This is encouraging unpunctuality. Why are arrival indicators headed "Minutes late"—it should be "Minutes early." Encouragement to engine crews would do a lot, but I suggest that station staffs require tackling, for the work is often completely unorganised.

Why not employ, first, a psychological expert, who would probably make an enormous difference; and secondly a railway enthusiast, who could move as a free lance and report on the working?

Yours, etc.,

G. E. THORNTON,
Lt.-Colonel.

The Scrap Heap

LONDON TRANSPORT SAVES COAL

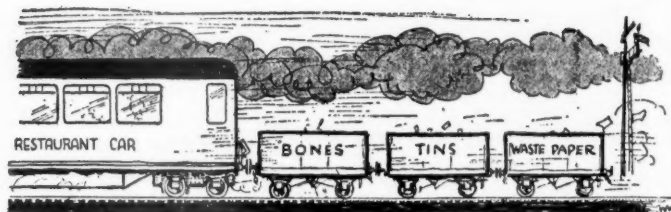
An appeal for fuel economy which London Transport has made to drivers states: "3,000 tons of coal could be saved annually if each driver of a tram or trolleybus coasted one mile a day during his term of duty. The saving could be increased very considerably by gradual acceleration or retardation. Drivers are asked to do their utmost in assisting to save fuel." Motormen on the Underground are also asked to save current by coasting when this can be done without affecting the punctual running of the trains.

RAILWAYS AT A DISADVANTAGE

The railways which are planning to build a new terminal station in Chicago are being urged to hustle by the city authorities, and some newspapers have criticised the railways as old-fashioned and slow. Our contemporary, the *Railway Age*, contrasts the problems of the railways with the position of the airlines which are now asking for a new Chicago airport. It remarks: "The airlines don't expect to put up the money for the airport—the taxpayers will do that. The airlines don't expect to move a lot of roads and railroad tracks and buildings to make room for an airport bigger than anyone else's—but they expect the city to do it. They aren't even making the plans—the city is doing that, too, and, apparently, it likes the whole idea, which makes it pertinent to inquire just what's wrong about the railroad's technique."

LONDON TRANSPORT LOST PROPERTY

As many as 14,283 food and clothing ration books were mislaid by their owners during 1945 on vehicles and premises of the London Passenger Transport Board. This is one of the items in a summary of the year's activities of the board's Lost Property Office at Baker Street. Altogether 219,086 articles, an increase of 8 per cent. over 1944, were brought in to the Lost Property Office during 1945, and of this total 85,287, or almost 39 per cent., were restored to their owners. Among these articles were: 27,871 suitcases and bags,



[Reproduced by permission of the proprietors of "Punch"]

25,107 umbrellas, 33,658 pairs of gloves and 14,284 single gloves, 22,629 items of clothing, 41,378 articles of value, 5,459 identity cards and almost 20,000 other documents, including ration books, service documents and passes, and so on. Every effort is made to find clues to ownership, and when found the owner is notified by letter. Such notifications sent out during 1945 numbered 12,849. The carrying of identity cards has greatly assisted in tracing owners of handbags and 70 per cent. of those received in the Lost Property Office have been restored to their owners. Eleven items of over £100 in value—mainly jewellery—were received and all were restored to their owners.

UNCONSIDERED TRIFLES

Ann McBride, a 20-year-old railway guard, was sent to prison for three months at Tower Bridge Court recently for stealing a watch, a whistle and a box of detonators, which had been issued to her by the Southern Railway. It was said that

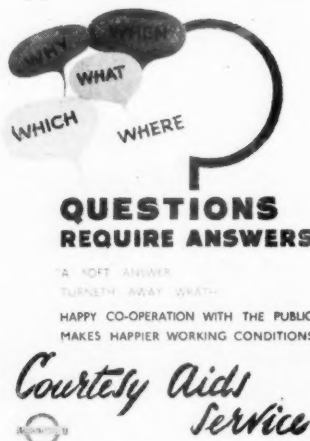
100 YEARS AGO

From THE RAILWAY TIMES, March 28, 1846

Just Published, fcap. 4to. Price 6d.
A Railway Traveller's Reasons for adopting
UNIFORMITY OF GAUGE.—Stated in a
Letter to I. K. Brunel, Esq.
Joseph Cundall, 12, Old Bond-street.

RAILWAYS.—UNIFORMITY OF GAUGE.
—THE GAUGE QUESTION: Evils of Diversity of Gauge. With a Map. By WYNDHAM HARDING. Third Edition. Price One Shilling.
"An able pamphlet."—Spectator.
John Weale, 59, High Holborn; to be had from all Booksellers.

Courtesy Aids Service



Posters addressed to the public (left) and to the staff (right) in the London Transport courtesy campaign

after reporting sick she sold the watch for 10s., and threw the other things away. She had a previous conviction for unlawful possession of an Army parachute.—From the *"Evening Standard."*

POLITENESS PAYS ON THE SOUTHERN

That the public appreciates politeness and courtesy is borne out by the number of letters received by the Southern Railway in praise of individual and collective cases of acts of courtesy on the part of the staff. Letters of appreciation are often accompanied by donations for the Southern Railway Orphanage. "I am sending the enclosed," says "Pater" of Guildford, "as a small appreciation of all the help and unfailing courtesy I have received from members of the Southern Railway Company throughout the war years." Southern Railway courtesy also prompted a gentleman returning to England after being interned in Guernsey during the war to write "I want to express my deep appreciation of: the prompt and kindly courtesy I received from the Southern Railway people." The Southern Railway feels that in the post-war world the reputation and progress of the company will depend to a large extent on the degree of helpfulness and courtesy the public receives from the staff. Quotations from a leaflet on courtesy, recently issued by the company to every member of the Traffic Department staff, were given on this page in our February 22 issue.

OPERATING ODES

The changing of the guards

They're changing guards at Six Mile Bottom.
Let's take a journey there to watch 'em.
No prancing horses will there be,
Nor cheering crowds down there to see,
But just the guards and you and me
At Six Mile Bottom.

They're changing guards at Six Mile Bottom.
No need for signals now to stop 'em;
With brake in guard's van well applied
The trains are standing side by side
While guards advance with steady stride
At Six Mile Bottom.

They're changing guards at S.M.B.,
A pretty sight you now will see.
They bow before they even speak,
Then swap their penknives, kiss each cheek,
Recite the trains they worked last week
From S.M.B.

They're changing guards at Six Mile Bottom.
Each guard makes sure there's nought forgotten,
Then once more gives the "Right away"
While control swears for such delay:
They'll not change guards another day
At Six Mile Bottom.

H. W. W.

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

INDIA

First Post-War Railway Budget

Presenting the Railway Budget on February 18 in the Indian Legislative Assembly, Sir Edward Benthall, the War Transport Member, provided for a decline of Rs. 48 crores in the gross traffic receipts in 1946-47. "There was no question," he said, "that the Indian Government Railways had prospered financially in many ways as the result of the war." In April, 1939, unpaid contributions to general revenues amounted to Rs. 35.41 crores, while the depreciation fund stood at Rs. 25.09 crores, and the reserve fund was Rs. 48 lakhs only. At the end of the current year it was calculated that, after contributing during the war Rs. 158.43 crores to general revenues, the depreciation fund would stand at Rs. 100.61 crores and the reserve fund at Rs. 29.05 crores.

The surplus for 1944-45 was Rs. 49.89 crores, while that for the current year was expected to be Rs. 32.07 crores, with traffic receipts reaching the peak figure of Rs. 225 crores. The estimate for next year showed a revenue of Rs. 177 crores, which was Rs. 48 lakhs less than the gross traffic receipts expected in the current year. In addition, a revenue of Rs. 3.14 crores was expected from miscellaneous transactions. Ordinary working expenses were placed at Rs. 125.73 crores, and after deduction of charges, the surplus was estimated at Rs. 12.22 crores.

Rolling Stock Position

A total of 216 broad gauge and 94 metre gauge underframes which were arriving from Australia, together with all spare underframes which could be collected, would be used for an early increase of lower class stock. Railways would also proceed with the development of air-conditioned upper class stock, but the main effort would be concentrated upon the improvement of lower class travelling.

The position regarding engines and wagons was more satisfactory than that of coaching stock. Of an order for 934 broad gauge engines, 733 had already been put into service and 61 had been shipped or received in India. Of 17,934 wagons on order in India, 13,439 were expected to be delivered before March 31, while 6,000 would have been received from Canada and 3,800 from the United Kingdom. When all these deliveries had been completed, the railways, which began the war with some 7,279 engines and 193,805 wagons, should have available 8,541 engines and 239,000 wagons. Indian industry was expected to be able to cope with replacements and further additions, though a certain number of passenger engines would have to be obtained from abroad before the locomotive building works now in course of erection in India were in a position to meet the demand.

Financing New Works

For the construction of new railways, surveys were proceeding over 3,000 miles of line, and work was being put in hand on such sections as did not require any further survey. Rs. 22 crores had been budgeted next year for new constructions and open line rehabilitation works. The board was also considering schemes for developing electric traction and of research to improve on the latest technical progress. The Government had a large programme of additions and improvements, including amenities for the public and the staff,

which were not likely to be remunerative. For financing them, the Government had now decided to fall into line with the best railway practice in other countries of providing such expenditure out of revenue. To enable the Railway Board to plan ahead its programme of such works, it had been decided to start a betterment fund by transferring Rs. 12 crores from the railway reserve, and a sum of Rs. 3 crores from the net revenue of the current year.

Prospect of Falling Receipts

Sir Edward sounded a note of warning when he pointed out that the satisfactory results in the past years had been largely due to war conditions, and only to a very limited degree to increased rates and fares; that he had already budgeted for a fall of Rs. 48 crores in receipts, and that future tendencies were more likely to be downwards than upwards. "Government and the House," he said, "may well have to give serious consideration to the linked problems of the levels of rates and fares, the price of coal, and the level of wages."

The acquisition by the Government of all the major Indian railways clearly rendered desirable and possible a thorough revision of the railway rates structure. It was hoped before long to produce a revised system of rating, which would eliminate unhealthy competition between railways, reduce very drastically the difference between railway risk and owners' risk rates, and simplify procedure.

In conclusion, Sir Edward pointed out that India had in her railways a valuable asset which had been maintained without disastrous loss of efficiency owing to war usage, and was in many ways much better equipped technically than before the war. Rehabilitation was in hand and resources existed to effect it without undue strain.

Sound Financial Position

Financially the position was sounder than it had been at any stage in the history of Indian railways, and bore no relation to the situation revealed after the last war. The one great potential danger which had to be faced was the war-time legacy of a high level of operating costs and of post-war commitments for amenities, together with a level of rates and fares out of tune with the general level of prices.

EGYPT

Plans for New Mixed Traffic 4-6-0

A 2-cylinder 4-6-0 mixed traffic locomotive with 6 ft. 2 in. driving wheels is included in the post-war locomotive renewal programme. These engines will be used among other duties for express passenger trains which hitherto have been worked mostly by engines of the 4-4-2 wheel arrangement. These Atlantics were introduced in 1913, when five were supplied; a further 20 engines were supplied in 1921, and 55 in 1925-26. They have 6 ft. 6 in. driving wheels.

With increasing weight of rolling stock, the limited adhesion of the Atlantics throws great strain on them in keeping time with full loads and fast schedules, and the time has undoubtedly come when these arduous duties should be given to engines with greater tractive effort. In 1934-35 two of the Atlantics were experimentally converted to the 4-6-0 wheel arrangement, but no further conversions have been made.

Apart from the two converted engines,

the new 4-6-0 locomotives will not be the first engines of this wheel arrangement to have worked express services on the E.S.R. As long ago as 1908, ten 4-6-0 engines with 6 ft. 3 in. coupled wheels and two inside cylinders were supplied to the E.S.R., but only two of these remain in service and they are now finishing their days on secondary duties.

SOUTH AFRICA

Record Air Travel

The number of passenger journeys made over the various routes operated by South African Airways during the month of December, 1945, was the highest on record, totalling 5,398, and exceeded the previous highest total recorded in October, 1945, by 402. The routes primarily responsible for the record were Rand-Cape Town, Durban-Cape Town, and Rand-Salisbury, each of which carried the highest number of passengers since the inauguration of the services.

Locomotives from Great Britain

Of 50 class "19D" (branch line) engines on order, seven are now in service; two are under erection, and 41 have still to be delivered. Advice has been received that three of the "G.E.A." locomotives on order have been shipped.

Coal Traffic Maintained

Coal traffic is being maintained at a high level. In the first two weeks of January, 794,471 tons of coal were placed on rail from Transvaal and Natal collieries. During the week ended January 16, the total tonnage of coal shipped was 119,347, the highest since the week ended March 10, 1945, when the record of 126,464 tons in one week was established. Vessels in port on January 16, and expected to arrive during the following week were booked to take 300,000 tons of coal.

Improvements at Germiston

Germiston, which handles more than 700 trains every twenty-four hours and which rates as the most important junction in South Africa, is being improved at a cost of more than £1,000,000. Work has been in hand throughout the war years, and special platforms, an electrified goods yard, adequate station buildings, and all the improvements necessary to ensure efficient operation, will replace the present structures. Germiston is the meeting point of trains from the Northern and Eastern Transvaal, from the Portuguese territory of Mozambique, and from Cape Town, Port Elizabeth, East London and Durban. The construction some years ago of marshalling yards at Angelo and Elsburg, and the transfer of much of the goods train marshalling work to these stations, has already made conditions easier. The new temporary yard at Elandsfontein, brought into operation towards the end of last year, has also helped considerably in the handling of goods traffic in the Germiston area.

Extension of Passenger Station

Up to the present, Germiston has had only three main-line platforms to serve the needs of its passenger traffic, including both suburban and main-line services. The extension of Germiston passenger station can be achieved only by encroaching on the goods marshalling yard. To clear the site it has been necessary to build, in addition to the three satellite marshalling yards mentioned above, very large new marshalling yards at Germiston itself. These yards are approached from each end by a complicated system of flyover junctions which separate the passenger and goods trains coming in from various direc-

tions. These works have been in hand for years past, but their completion has been delayed by the war.

The site of the new passenger station has been cleared and the final stage of the programme is being begun. The improvements include the construction of three new island platforms to the north of the existing platform, which is itself to be remodelled and extended when the new platforms are completed.

Workshops Improvements

Improved facilities are to be provided at the mechanical workshops to enable them to cope with the increased wagon repair work and maintenance. Other improvements include the erection of a new coal bunker near the locomotive depot at a cost of £30,000. Modern offices are to be built to house the stores department and the Mechanical Engineer and his staff. Ablution blocks and changing-rooms as well as a large cafeteria are to be provided in the workshop area, and £70,000 has been set aside for the construction and renovation of staff quarters in and around Germiston, including the building of 30 new houses.

CANADA

Cheap Fares Resumed

Wartime restrictions on reduced railway fares ended on March 15. The Hon. Lionel Chevrier, Minister of Transport, in making the announcement, spoke of "the Government's appreciation of the praiseworthy manner in which the regular travelling public restricted its travelling to a minimum during the war years," and "of the painstaking efforts of railway officials in coping with the problems involved." Restrictions on reduced railway fares were put into force in 1942, to conserve railway equipment, motor power, and fuel; and to ensure maximum use of railway facilities for the prompt and continuous movement of essential war traffic.

Canadian Pacific Air Lines

The Canadian Government has decided to grant a one-year extension to Canadian Pacific Air Lines, which will permit the Canadian Pacific Railway to continue operating the line. Under Government order the air line was to become a separate unit one year after the end of hostilities in Europe. The move to separate air lines from railways was brought about by an Order-in-Council last year in which the Government said that no railway could operate an air line as a direct unit of the company. Lack of aircraft to handle domestic services by the Government-owned Trans-Canada Air Lines is believed to be the reason for the extension, which is expected to end on May 8, 1947.

Railways for Relaxation

The idea that the demand for travel is finite, and has to be divided up among the several modes of transport, was declared to be a mistake by Col. E. W. J. Ragsdale, Chief Engineer, Railway Division, Edward G. Budd Manufacturing Company, Philadelphia, who addressed the Canadian Railway Club at the Mount Royal Hotel, Montreal, recently. "Travel is a commodity which has no saturation point," he said. "The ease of travel begets more travel. The airways and the highways won't have to compete with the rails; they can be made to supplement them. The airways made their own business; so did the bus and the private automobile—they did not steal it from the railways."

Col. Ragsdale pointed out that the more comfortable travel was made, the more passengers the railways would carry, and emphasised that the slogan of railways

should be "The Relaxed Travel." He did not believe that future trains should carry dance floors, kiddies' rooms, cinemas, and the like—they provided only sensations and not relaxation. Comfortable seats, individual sleeping cabins, and beds three-quarters of an inch longer than at present, were the things that enabled the passenger to relax while travelling.

He believed that the day of the present upper and lower berth was over, as the public was tired of "community sleepers" and wanted privacy. Modern sleeping cars provided individual rooms for 32 passengers for the same price as the present lower berth. Another sleeper that had been built combined 10 cabins with six double bedrooms. The cabins were arranged on either side of the aisle, with six double bedrooms at the end, each pair of which could be thrown into a suite. He claimed that instead of there being many kinds of sleeping car, all requirements could be met by two types of car.

UNITED STATES

5,000-h.p. Electric Locomotives

The Great Northern Railroad has ordered from the General Electric Company two 5,000-h.p. electric locomotives which will be the largest single-cab type in the world. Each will be 101 ft. long, and the weight on the driving axles will be 720,000 lb. They will be used on the 73-mile electrified section of the company's main line through the Cascade Range in the West Coast State of Washington. Delivery is expected late in the current year.

Seaboard Diesel-Electric Locomotive

A 3,000-h.p. diesel-electric locomotive has been supplied to the Seaboard Air Line Railway by the Baldwin Locomotive Works and the Westinghouse Electric Corporation, and is being used on heavy express freight trains conveying fresh fruit and vegetables from Florida to the northern markets. The 4-8-4 wheel arrangement has been adopted, the weight distribution being such that the weight on each of the eight driving axles has been kept down to 51,250 lb. The total weight of the locomotive in working order is 577,200 lb. Although capable of a speed of 117 m.p.h., the maximum speed of the locomotive in service is 85 m.p.h.

The locomotive has two 8-cyl. 1,500-h.p. vertical in-line diesel engines, with superchargers, each directly coupled to a Westinghouse 12-pole generator, with separate belt-driven exciter. The two four-axle motor bogies are articulated, and each carries four six-pole, series-wound traction motors. Each group of four motors is connected to its generator in series-parallel. The continuous tractive effort rating of the locomotive is 44,500 lb. at 20.2 m.p.h., and it is claimed to be the most powerful single-unit diesel-electric locomotive in the world.

"No Experiments with Transport"

The National Industrial Traffic League has presented to the House of Representatives committee on interstate and foreign commerce a statement of views based on the following four main premises: (1) The continuance of private operation and ownership of the railways and other transport agencies; (2) the continuation of the organisation and functioning of the Interstate Commerce Commission as "an independent regulating tribunal reporting only to Congress"; (3) that the whole scheme of regulation of carriers shall preserve to the trading public the proper advantages of each mode of transportation, with full regard to the rights of the owners of a fair return on their properties; and (4) that transport should not be re-

garded as a vehicle for social or economic experiments, or for refashioning general economic conditions or solving social problems.

The statement deals with the criticism that there is no declared national policy for transport, and observes: "The criticism ... comes generally from and is greatly stressed by students of economic subjects, rather than either operators or users of transportation."

NEW SOUTH WALES

September Quarter Results

Coaching earnings of the New South Wales Government Railways in the September quarter of 1945 were £3,579,723 compared with £3,352,886 in the preceding year. Goods receipts were £3,969,881, a decrease of £310,520. With expenditure at £5,979,503, as against £5,795,442, the operating ratio was 75.04 per cent., compared with 71.85 per cent. in 1944. The operating ratio in the September quarter, however, showed a decrease of 7.21 per cent. compared with that for the quarter ended June 30, 1945, which in its turn was 6.24 per cent. below that for the June quarter of 1944. The number of passengers carried in the September quarter, 1945, rose by 3,679,566 compared with the preceding year to 65,419,963, but goods tonnage was 525,255 tons lower at 4,198,484 tons.

WESTERN AUSTRALIA

Passenger Train Derailed

The engine and tender and four coaches of No. 2 passenger train, Katanning to Perth, were derailed while passing through Mount Helena Station (25 miles from Perth) at about 7.30 p.m. on January 1. The engine tender rolled on its side, but the coaches remained on their wheels at various angles. None of the passengers was injured, although five were taken to hospital suffering from shock. Damage to the rolling stock, permanent way and interlocking, was extensive. An inquiry into the accident revealed that the train approached the points at excessive speed, and that this was the cause of the derailment.

FRANCE

Road Transport Relieves Paris Metro

Motorbuses are again appearing in the central parts of Paris. During the war they were confined to connecting outlying suburbs with the Metro terminals. The authorities are now planning to put 500 additional petrol-driven buses on the streets. These should tend to relieve the tremendous pressure on the Metropolitan underground lines.

Further relief to the Metro lines is promised by the addition of numerous taxicabs to those already plying for hire in Paris. Four thousand new taxis will run in Paris proper, and 2,000 others in outlying districts, as soon as conditions permit. The few cabs licensed after the Liberation were allotted to special services and not for the general public.

Ever since the beginning of the German occupation the Metro lines have been of wonderful service to Parisians, who had no other means of transport at their disposal. They still have to cope with a tremendous traffic. Although the electric power supply is cut to a minimum, the transport capacity is now greater than at any previous period of Metro history. Since 1943, when the traffic reached a maximum of four million passengers daily, 10 per cent. has been added to the second class accommodation.

The Responsibilities of the Signal Engineer*

Mr. Herbert H. Dyer's Presidential Address to the Institution of Railway Signal Engineers

HALF a century ago the signal superintendent was responsible for semaphore signals, mechanical connections to points and signals, and mechanical locking frames, but little else troubled him. So far as I remember, he was not concerned with anything electrical. The telegraph superintendent was responsible for the block telegraph. Staff and tablet instruments were in use on single lines and lock-and-block had been introduced. Telephones were being used, though in rather primitive form. It was still the day of the single-needle telegraph instrument.

Since then engineering has become subdivided into highly-specialised sections, one of which is represented by this Institution. It is doubtful if any of them embrace a wider application of engineering principles than that of railway signal engineering, or carry greater responsibility towards the public. The signal engineer of a railway has also considerable responsibility to his company, as often on his advice far-reaching decisions are made. Formerly the signalling expert pored over mechanical interlocking problems. Today the signal engineer must have a staff of specialists in mechanical and electrical engineering.

The Work Involved

The length of running line for which a signal engineer is now responsible is often much greater than that of the largest pre-grouping railway. The approximate mileages of lines open for traffic before the recent war were: G.W.R., 3,780; L.M.S.R., 6,870; L.N.E.R., 6,365; Southern Railway, 2,160; a total of 19,175. Reduced to single track this is increased considerably (in the case of the L.M.S.R. alone to 19,300 miles). The amalgamations imposed on signal engineers the task of co-ordinating practice and standardising apparatus. A considerable development programme also was carried out.

The field for future development is wide, but the primary responsibility of the signal and telegraph engineer is the maintaining in good order of the mechanical and electrical signalling apparatus. The following approximate figures for a selection of apparatus in use on the L.M.S.R. indicate the size of this problem:—

Mechanical signalling levers	140,000
Power signalling levers	2,300
Main running signals	35,000
Subsidiary signals	55,000
Colour-light signals	2,500
Power point-mechanisms	1,800
Electric signal-machines	600
Track circuits	10,000
Signalling relays	50,000
Signalling indicators	27,000
Telephone instruments	33,000
Telephone switchboards	200
Loudspeaker installations	90

If each track circuit were operated on an average only 50 times a day, this would mean a total of half-a-million operations a day, or more than 180 million operations a year. The same frequency of operation for the relays represents 2½ million operations a day, or over 900 million operations a year. With each relay controlling an average of three contacts, we reach the enormous figure of nearly 3,000 million relay contact operations annually. The small number of failures

represents only one in many millions of operations, a fine testimonial to design, manufacture, testing, and maintenance.

A systematic programme of servicing is necessary, particularly of electrical apparatus; and a complete inventory has to be made and kept up to date. It is desirable for a railway to have its own workshops for this servicing. Many types and makes of apparatus are in use and it is impracticable to arrange for any particular one to be taken out of service and sent in at one time. Railway workshops are in a position to handle apparatus as it comes in, irrespective of type or make. All apparatus is carefully examined before servicing. It is also advantageous to have a laboratory. The manufacture in railway workshops of standard electrical signalling apparatus which can be purchased at reasonable prices is not advocated; but where such apparatus is unsuitable railway servicing workshops are ideally suited to make it.

The Renewal Programme

One example of a planned renewal programme is that of signals. With the thousands of mechanical signals in use on a large railway, a quantity requires to be renewed each year, especially as many timber posts were used previously. When renewing semaphore signals, the opportunity is taken, in accord with modern practice, of siting them on the driver's side of the line and as close as practicable to him. In the case of distant signals on important main lines, it has been L.M.S.R. practice for some years to renew them as colour-lights, fixing them on the driver's side of the line and as close to his eye as the structure gauge permits, so that it is unnecessary to employ fog-signalmen. When wholesale renewals fall due at large stations, it is the general policy to replace semaphores by multi-aspect colour-lights.

New Works and Concentrations

In many cases the introduction of continuous track circuiting enables the closing of signal boxes and the concentration of work at a smaller number. In such cases the signal engineer can retain the mechanical interlocking frames, or install an orthodox power frame or a panel system, with one of the several varieties of relay interlocking or the equivalent. He is responsible for recommending the system to be adopted. Serious consideration is necessary before deciding whether to forgo the advantages of interlocking between levers, especially under failure conditions where the presence of such interlocking allows of a degree of freedom to traffic movements which would hardly be safe in its absence. If a power frame is to be installed, shall the interlocking be mechanical or electrical? There are points in favour of both. Cabling, power supply and standby plant have to be considered, signal structures designed, relay rooms with their distribution and fuse panels laid out, and many other details decided.

I do not propose to express an opinion as to whether re-signalling work should be done by the railway or contractor, except to say that on railways of the present size certain new works and renewals are always in hand and trained staff available, some of which can be detached to form the nucleus of a gang for large re-signalling works, and the complement made up partly

from the maintenance staff, which ultimately will have to look after the installation. Such an arrangement enables the men to become familiar with all the details.

Training and Selection of Staff

For many years the L.M.S.R. has had a training scheme for engineering apprentices, providing for taking on a youth at 16 or 17, educated at least to School Certificate standard, and giving him a period of training as follows:—

	Months
Signal shops (machine, fitting and pattern shops)	9
Telegraph shop and test room	9
With signal construction gang	3
With telegraph construction gang	3
With telegraph lineman	6
With area assistant	12
With electrical section at H.Q.	12
Divisional drawing office	6

During the period he attends day and evening engineering classes, and is expected at the end of his training to have obtained a Higher National Certificate, after which he should take the examination of one of the senior engineering institutions.

A scheme for training probationers also has been introduced recently; the curriculum is as far as possible:—

	Months
With telegraph lineman	8
With signal lineman	8
With telegraph construction gang	6
With signal construction gang	6
With locking lineman (fitter)	8
With electrical installer	12

Youths commence at about 16, and on reaching 20, or on completion of training, are given a test as laid down for assistant linemen. If they pass they are eligible for consideration for assistant linemen's positions. A number have attended evening classes and obtained an ordinary National or Higher National Certificate.

The thorough training of staff who may become maintenance inspectors is very important, as they must have sound knowledge of both the mechanical and electrical sides. During our careers we have all received much help from those under whom we have served, and the least we can do is to try to repay the debt by giving helpful advice to junior members of the staff.

Care in the choice of staff for technical and supervisory positions is very important. A man who would have to deal with officers of other departments, engineers of other railways or contractors, or would have the handling of men, cannot be judged solely on technical qualifications or engineering experience. He must have understanding and a certain charm of manner which ensures co-operation; he must give credit where credit is due and be just. For the highest positions, organising and administrative ability are important.

Arrears of Maintenance

In six years' war during which the railways were carrying out a large programme of Government works with depleted staff, which often worked long hours repairing air raid damage and was living under great stress, it was inevitable that the maintenance and renewal programme should fall behind. Efficiency has not yet suffered seriously, but if we are to maintain the usual high standard it is imperative that we overtake arrears of maintenance before contemplating too ambitious a development programme.

Railway signal engineering has a big part to play in the future, and it is encouraging to see the interest and enthusiasm manifest in our meetings. If I may say so with due modesty, we are a very important body of engineers, and we should not only maintain but try to raise the prestige of our Institution.

* Abstract of presidential address delivered before the Institution of Railway Signal Engineers on March 18 by Mr. Herbert H. Dyer, M.I.E.E., M.I.R.S.E. (Assistant Signal & Telegraph Engineer, L.M.S.R.)

Organisation of the Chief Civil Engineer's Department, Southern Railway

A department embracing outdoor machinery and production, in addition to the customary maintenance, new works, signalling, and buildings

IN the course of his lecture to the London Section of the Permanent Way Institution entitled "Civil Engineering on the Southern Railway," Mr. V. A. M. Robertson, Chief Civil Engineer of the Southern Railway, outlined the organisation of his department, and exhibited the accompanying organisation chart. An abstract of the paper was given in our issue of March 1 (page 230) but the details of the organisation are of sufficient interest to justify more extended treatment.

The Chief Civil Engineer of the Southern Railway is entrusted with the responsi-

pany in June, 1939 (just before the recent war), numbered 16,302, divided as shown at the foot of the chart.

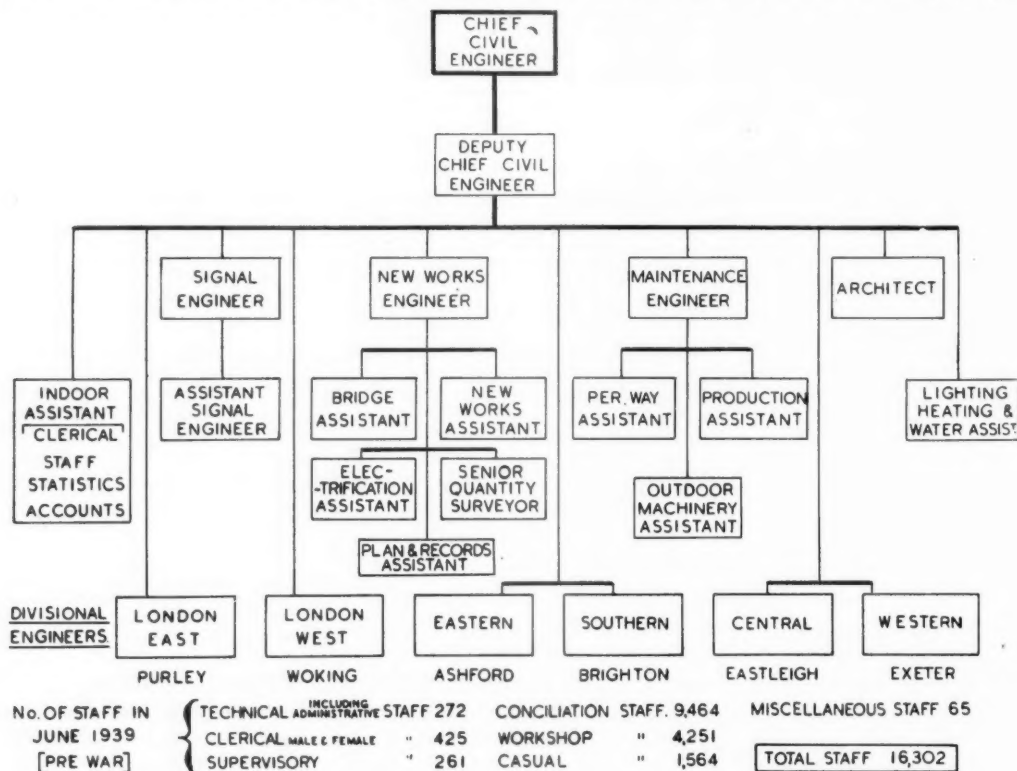
The Chief Civil Engineer reports directly to the General Manager, from whom he receives instruction, advice, and very considerable help.

The Department is called upon by all other departments of the company to prepare schemes and estimates for alterations, improvements, and new works, and when these schemes are ready the General Manager decides after considering the report of the proposing Department whether the

such as permanent way, buildings, bridges, signalling, telephones and other communications, lighting, heating, water, and the maintenance of plant and equipment. Abstract "A" expenditure in the post-war years will be much in excess of the pre-war years.

The Outdoor Machinery Section of the Department deals with the maintenance of such matters as coaling plants; steam cranes; wagon hoists; turntables; boilers; fire pumps; compressor plants; and fixed and mobile plant and machine tools of all types.

This section is under the direct control of an Assistant reporting to the Maintenance Engineer. Incidentally, a section of this type under the control of the Chief Civil Engineer is a peculiarity of the Southern Railway. The section serves practically all the departments of the company, and is, for example, responsible for



Organisation chart, Chief Civil Engineer's Department, Southern Railway

bilities of designing, constructing, and maintaining everything of an engineering character on the railway, with the exceptions of locomotives and rolling stock, the generation and distribution of electric power, and the engineering works in Southampton Docks, together with certain ancillary engineering works in some of the other ports of the country.

The organisation chart reproduced shows that the main split-up of duties and responsibilities is organised with headquarters sections located in London to deal with signalling and telephones; new works; architecture; permanent way; bridges; lighting, heating, and water; and outdoor machinery. In addition, the department is arranged on a divisional basis, with six divisional engineers, each responsible for the civil engineering work on his division. The total staff on the books of the com-

pany shall proceed. If the matter is to proceed, the sanction of the Board of Directors is obtained by the General Manager, and the Chief Civil Engineer is instructed to put the work in hand. These works vary in magnitude from a new train ferry dock, such as was built by the Department between the wars at Dover at a cost of £850,000, to a new fogging post costing, say, £100. New works, alterations, and improvements are not always being carried out, of course, but hitherto in conformity with the progressive policy of the company there has hardly ever been a slack period.

In addition to these types of work, the Department is entrusted, naturally, with a very large annual expenditure, amounting on the average in a pre-war year to £3½ millions. This expenditure represents the cost of maintaining Abstract "A" works

the inspection, testing, and periodical annealing of 12,000 lifting chains for the Traffic Department, and 4,000 for the Chief Civil Engineer's Department. The section trains, tests, and passes out crane drivers for several departments. The staff employed in the section totals 260 of all grades, and consists of men in all trades highly skilled in their specialised work.

The production side of the Chief Civil Engineer's Department is important and progressive. The main items of production are:—

- Ballast from the company's stone quarry at Meldon near Okehampton;
- Pre-fabricated concrete articles from Exmouth;
- The crossotising works and point and crossing shop at Redbridge; and
- The civil engineering shops at Angerstein Wharf.

From Meldon Quarry the Southern Railway now produces about 160,000
(Continued on page 349)

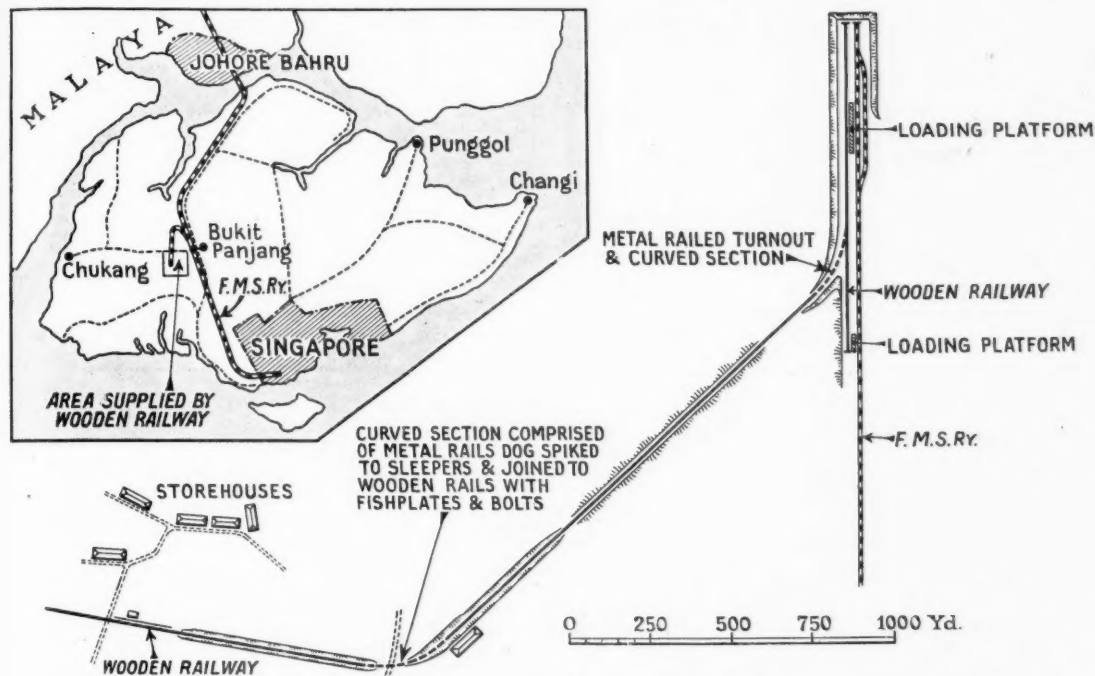
Japanese Wooden Railway in Malaya

A wartime expedient on Singapore Island

AN interesting example of narrow-gauge wooden railway was built by the Japanese during their occupation of Singapore Island, and we are indebted to Brigadier A. R. G. M. Edwards for sending us the accompanying drawings and

a narrow metal sleeve to take the wheels. Eight nuts and bolts were used to hold the axle blocks to the trolleys and in some cases nails were used to hold the trolley floor boards down. Turnouts and curves were of standard narrow-gauge metal rails

ment and through a cutting, as well as on the level on to a light clay soil. No ballast was used, and the only drainage provided was a narrow open drain through the cuttings. The track would appear to have weathered well, and there are very few signs of splitting or warping. Some of the woodwork had been treated with a preservative, but a large quantity had been left untreated.



Layout of wooden railway on Singapore Island, with (insert) sketch map of location

details, which were collected by Major R. D. Camplin, R.E. The railway in question was of two-foot gauge and its construction would suggest either an acute shortage of metal or the presence among the Japanese Army of an enthusiastic carpenter! Both permanent way and rolling stock were constructed entirely without metal, except that each wooden axle had

which had been laid on wooden sleepers. The railway was built to handle the transhipment of stores from a standard metre-gauge siding to military stores houses dispersed over a wide area of rubber plantation. The line was of some two route miles in length, and was hand operated.

The track was laid along an embank-

The rails have a slight bevel on the running edge and show little sign of excessive wear. This is generally true of the wheels, except in the case of two of the trolleys, where two wheels on each had been made from badly-selected timber.

The trolleys are of the normal design and the flat platform tops are placed 19 in. from rail level.

Organisation of the Chief Civil Engineer's Department

(Continued from page 348)

cu. yd. of stone ballast every year, and, with the additional plant and facilities now being provided, is aiming at an annual output of not less than 225,000 cu. yd.

The objects of the company in producing pre-fabricated concrete articles on its own property, and with its own labour, is to manufacture better, and as cheap if not cheaper, articles than can be bought outside. These production shops have been placed on a strictly business footing. Accurate costs are kept of all work done, and unit prices applied to all articles produced. The general responsibility of production work rests with the Production Assistant to the Maintenance Engineer, and the terms of reference of his job are: "To produce as many as possible of the articles of engineering required by the Department to a pre-determined annual

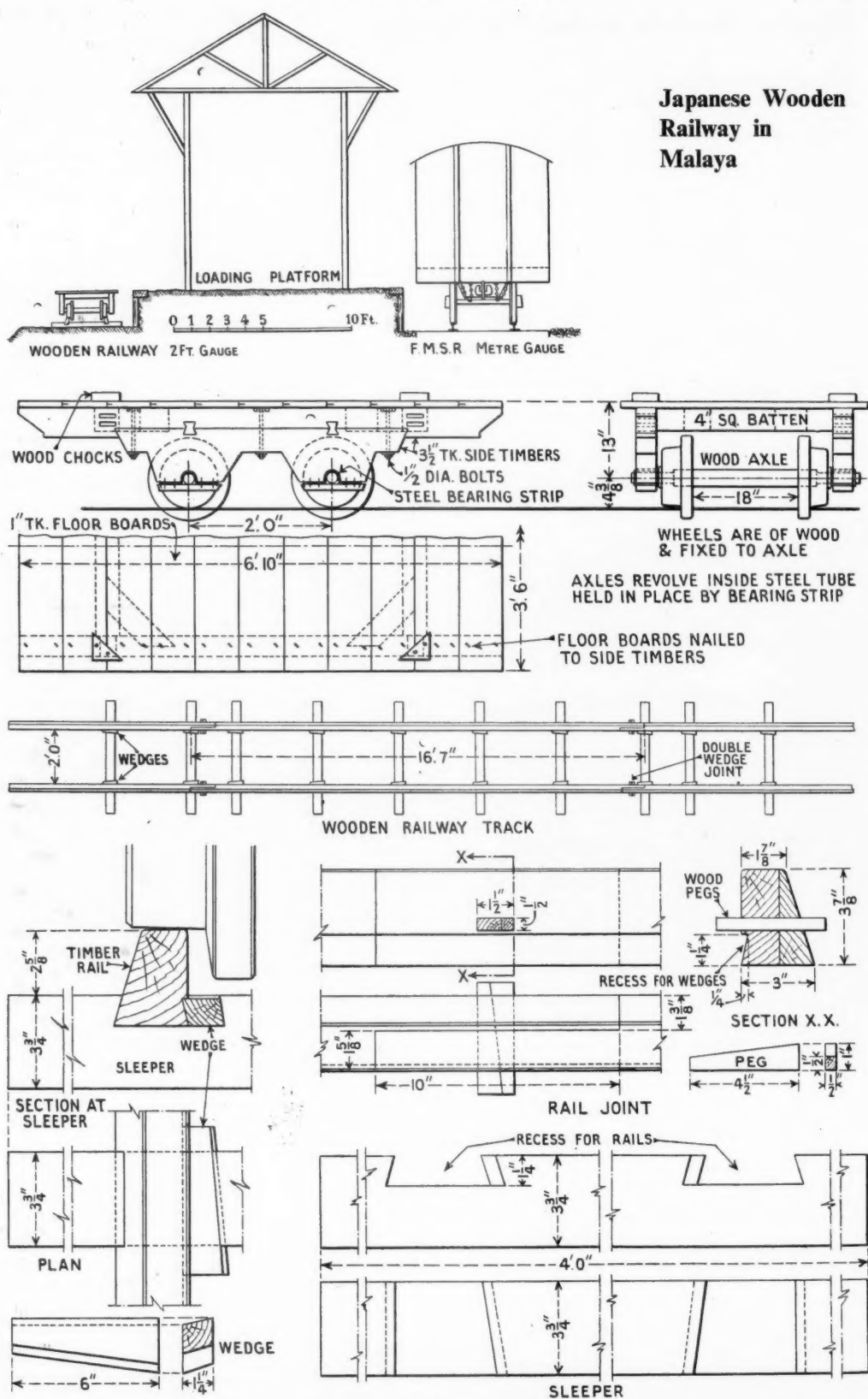
programme at a price strictly in competition with the outside market, and to ensure at the same time the use of the best available material and the best possible workmanship." The Concrete Casting Factory at Exmouth Junction is under the direct control of the Divisional Engineer at Exeter.

LORD ASHFIELD WELCOMES L.P.T.B. EX-SERVICE PERSONNEL.—Some fourteen hundred members and guests of the London Transport (Baker Street) Dining & Social Club attended a dance at the Seymour Hall, Marylebone, on March 21, for those members of the club who have returned from the Services. Lord Ashfield, Chairman of the London Passenger Transport Board, welcomed the ex-Service men and women, and Mr. H. J. Jones, of the Board's Welfare Department, who was the first Secretary of the club, and who has been serving in the Royal Artillery, attain-

ing the rank of Lt.-Colonel, responded on their behalf. Entertainment was provided by a cabaret in which several well-known stage and broadcast artists, including Messrs. A. J. Latimer, Tony Lowry and Clive Richardson, and "The Two Maroons," appeared, and Mr. Harold Warrender conducted a "quiz" assisted by selected members of the club. The club was formed in 1934, and since that time has been staffed and maintained wholly by the Board's employees without cost to the Board. It has over a thousand members, and has kept going throughout the war, in spite of bomb damage, serving as many as 120,000 meals a year, apart from providing other social amenities.

G.W.R. WREXHAM-ELLESMERE BRANCH.—The Great Western Railway Wrexham-Ellesmere branch line, with its nine intermediate stations, is to be reopened for passenger traffic on May 6. The branch was closed in 1940 to accommodate the Royal Ordnance Factory at Marchwiell.

Japanese Wooden Railway in Malaya



Details of transshipment arrangement; flat-bottom trucks; and track construction

United States Convertible Sleeping Car Design

Provision of rooms on two levels with full-size folding beds

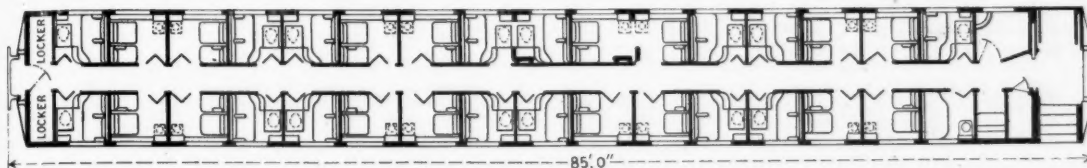
AMONG novel designs for passenger rolling stock in the United States is a sleeping car, 85 ft. long, with single room accommodation for 32 passengers. The car provides comfortable single-occupancy facilities both by day and night at a low cost. The "Budgette," as the car is named, has been designed by the Edward G. Budd Manufacturing Company. With the help of the ample American loading gauge, the rooms are on two levels, one the corridor level, and the other a little above it. Adjacent rooms

on the same level are so arranged that they can be thrown together in pairs to provide double bedrooms. The rooms have full-size folding beds. Each room has its own necessary appointments for comfort.

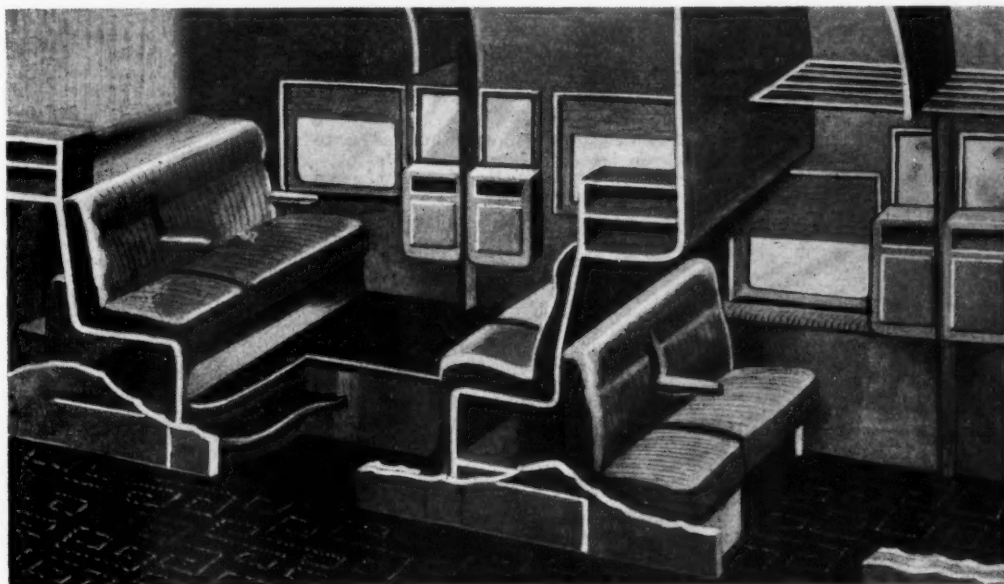
The same company has designed a double bedroom car, with more spacious accommodation, intended, as in the corresponding Pullman single room sleepers, to be let at a higher supplementary rate for each room than the "Budgette." In this car, beds 6 ft. 4 in. long are pro-

vided, two in each room, which also can be folded out of sight; but an unusual feature is that half the rooms have their beds arranged longitudinally, and the remaining half transversely, to suit passengers' individual preferences. Each room has its own toilet with shower-bath; in the daytime a spacious room is available, clear of all obstructions, with a large panoramic window.

The Budd Manufacturing Company has three different types of sleeping car under construction and it is planned that all three be incorporated in the same train to provide a variety of differently priced accommodation to suit the means of all travellers.



Room plan of the proposed "Budgette" convertible sleeping car



Longitudinal sectional view of the "Budgette" cars showing the interchangeability of the single and double rooms

PROOF TEST FOR CREEP QUALITY OF CARBON STEEL BOILER PLATE.—A method of test has been issued by the British Standards Institution for checking the creep quality of boiler plate steel. The information was particularly required by the committee of the Institution which is engaged in preparing a standard for boilers, as it was felt that the value of the maximum stress which could be permitted was contingent on the material not possessing a high creep rate. This test has been prepared after a considerable amount of research work on specimens of boiler plate, and the standard lays down the conditions of the test and the values which should be

considered as satisfactory. These values relate only to carbon steel plate of boiler plate quality. Copies of the standard (B.S. No. 1271) may be obtained from the Publications Department, British Standards Institution, 28, Victoria Street, London, S.W.1, price 1s.

FUEL RATIONING FOR GOODS AND PUBLIC SERVICE VEHICLES.—As from March 20, the fuel rationing of goods vehicles was placed on an eight-weekly basis, instead of a four-weekly basis as before. This and other measures of simplification will enable sub-district managers and group organisers who were appointed

under the Emergency Road Transport Organisation to be released from these duties as from March 31. The change is purely one of procedure, and does not imply any alteration in the policy of fuel rationing or in the basis on which rations are issued. Goods vehicle operators should continue to submit their applications for fuel rations through their group organisers up to March 31, and thereafter send the applications direct to the local traffic officer of the Ministry of War Transport. The fuel rationing of public service vehicles has also been placed on an eight-weekly basis at the same time.

Choice of System for Main-Line Electrification

An investigation conducted in Germany has strengthened opinion there in favour of single-phase working

A REPORT was published at Innsbruck during the war on the deliberations of a Reichsbahn Committee of Inquiry presided over by Dr. Ganzenmüller and set up in May, 1941, to investigate the question of choice of system for the general electrification of main lines in Europe. This question has formed a sort of gauge question, in that through running is affected by break of system, although not in the same absolute sense as with break of gauge. Difficulties are created at frontier and junction points, where already special measures have had to be taken to meet them. In addition, if electrification is to be extended on any considerable scale on the Continent—and Germany apparently had plans in view to this end for the countries she was hoping to control—then the economic side of the question, above all the necessity of keeping the consumption of certain raw materials down to a minimum, will be an essential ruling factor in the case. Local circumstances should not, according to the conclusions of the committee, be allowed to weigh against the general interest, but in the Spanish rendering of them, from which our details are taken, it is emphasised that the break of gauge at the Spanish frontier enables Spain and Portugal to view the problem with some detachment.

The committee compared the following three systems:—

(a) Single phase a.c. 16½ cycles, 15,000 volts; (b) Single phase a.c., 50 cycles, 20,000 volts; (c) d.c., 3,000 volts.

To form a reliable comparison, figures were worked out for a line 750 km. (about 470 miles) long, having a gradient profile and other characteristics approximately typical of average conditions on the Continent, and presumed to carry an intensity of traffic which was considered to be likely after the termination of the war. The annual *tonne-kilometres* are taken inclusive of weight of locomotives, at 38,835,000,000, and the factor of kWh

km. year as 917,000. It is stated that it has been customary, hitherto, to take the lowest limit for this figure, as governing the decision to electrify at 250,000, but that frequently it has been found worth making the change on a much lower figure, as when coal is very difficult to obtain and water power is available, as in Sweden and Norway, where the index figures are about 40,000 and 13,000 respectively. Full details were worked out, based on known costs and quantities, for the power plant, distribution system, track equipment, locomotives, and rolling stock. A line of light traffic was also considered.

The single-phase low-frequency system, in general use in Germany, Switzerland, Norway and Sweden, as also for some important electrifications in America, has reached a high degree of technical development, as have the rival systems, and the report states that it is definitely to be preferred for general European conditions. As compared with the single-phase 50-cycle (commercial-frequency) system, it is thought that it has the advantage of an advanced state of development, to require less materials, to cost less for installation and upkeep. Compared with the d.c. system it requires less working staff and is entirely free from electrolysis trouble. No mention appears to have been made of the greater difficulty of inductive interference

with telephone and telegraph circuits, which is certainly a disadvantage of the single-phase system but one which can be countered by suitable measures.

Taking the figure for the 16½ cycle system as unity, the report gives the following figures for first costs for the other systems:—

	Single-phase 50-cycles	d.c. system
Power stations	0.95	0.98
Distribution lines	1.54	1.69
Sub-stations	1.21	3.14
Contact line	1.00	1.34
Locomotives	1.16	1.11
	1.09	1.26

MATERIALS CONSUMED

	Single-phase 50-cycles	d.c. system
Steel and iron	1.04	1.17
Copper	1.12	1.20
Aluminium	1.10	1.32

Again taking the low-frequency system as 1, the following figures are given for annual charges:—

	Single-phase 50-cycles	d.c. system
Interest and depreciation on fixed equipment and locomotives ...	1.17	1.40
Renewal of above	1.17	1.35
Maintenance, operation, and staff ...	1.08	1.27
Power consumption	0.80	0.83
	1.03	1.18

In arriving at these index figures it is said that every allowance possible has been made in favour of the 50-cycle and d.c. systems so as not to load them unfairly against ordinary low-frequency single-phase working, and the opinion is expressed that the d.c. system cannot be considered at all for long main-line conversions under European conditions. It is even declared that it is not likely that it can be further improved, whereas single-phase equipment may be. It is admitted that much hope has been placed in the 50-cycle system, developed with great skill in Hungary, and that it has undoubted advantages, which would justify its use on certain lines able to be worked more or less to themselves. On lines of light traffic few locomotives would be needed, and their increased cost under the 50-cycle system would not be a serious disadvantage, this system being for such lines less costly for the rest of the equipment than the 16½ cycle system. If, therefore, traffic might always be expected to be relatively light, a decision to use 50-cycle equipment would be permissible. Directly there is any question of traffic reaching moderate proportions, the higher cost of locomotives puts the 50-cycle system out of the question.

Emphasis is laid on the fact that Germany early realised the importance of using a uniform system and that the former States of Prussia, Bavaria, and Baden agreed to use the 16½ cycle system, a decision later followed by Sweden, Switzerland, Norway, and Austria.

Incidentally, it is pointed out that this allowed Germany to send locomotives into Austria, just when it was convenient to her, and no doubt strategic considerations operated powerfully to influence the committee in arriving at the position set forth in this report, in which the German political outlook is decidedly to the fore. Notwithstanding this pronounced advocacy of the low-frequency single-phase system, the Berlin city and suburban lines were electrified on the third rail d.c. system, although the original proposals, set aside when the 1914 war broke out, were to

adopt single-phase working for those services. This suburban electrification has given every satisfaction and the equipment is excellently constructed. It does not appear from the Spanish statements on the subject whether the report makes any allusion to this difference of system already existing in Germany itself.

Whatever views may be held on the relative advantages and disadvantages of this or that system, it must be conceded that German traction engineers have contributed powerfully to the progress of electric working for main-line traffic, and made remarkable progress in the development of the low-frequency single-phase systems. In America, where d.c. working all along has found able and influential advocates, that system has likewise met with support and its details improved.

Largest Private System in Sweden Electrified

The opening to electric traction on February 18 of the line from Ludvika to Daglöv, not only inaugurated through running by electric trains between Gothenburg and Gävle, but completed the electrification of the largest private railway system in Sweden. The Gothenburg-Gävle route, 354 miles in length, belongs to the Bergslagen Railways Company, and forms part of a system with a total mileage of 838. Electrification has been carried out in sections, as noted in the Overseas columns of our March 8 issue. The "Bergslagsbanan" (mining area line), as this route is generally called, runs through six Swedish provinces and is of very great importance to the forest, mining and engineering industries in these districts. At the same time it is one of the most popular tourist routes in Sweden.

The changeover from steam to electric working has cost Kr. 39 million (£2,290,000), including locomotives. This is a considerable outlay, but one which probably will prove to have been well justified. Not only will the journey time from Gävle on the East Coast to the Swedish shipping centre of Gothenburg be reduced, but the operation costs will also be substantially lowered. According to one of the company's technical experts, the inaugural train consumed electricity to the value of Kr. 300 (£17) on the trip from Gävle to Gothenburg, while the corresponding cost by steam would have been Kr. 3,000 (£170). Electric traction will effect a saving of 80,000 tons of coal a year, a most important fact both for the company and for Sweden under present conditions. In addition to ordinary express trains, special light express train sets with a speed of 120 km.p.h. will be put into service this summer. They will be able to make the Gävle-Gothenburg journey in 7½ hr. compared with 11½ hr. at present.

The electrification of this line has given new life to public discussion on the continued nationalisation of the private lines. It is well known that this railway system is the next on the nationalisation programme. Many people, however, advocate that this well-managed company should be allowed to continue as a private enterprise, if for no other reason than to make possible a comparison between private and State operation of the railways, as this is the last existing private line of any importance. Of the total Swedish railway network, consisting of 16,570 km. (10,275 miles), 12,130 km. (7,520 miles) are now State-operated. The total of electrified track is 5,500 km. (3,317 miles).

Service Tests of Electric Locomotives—2*

A dynamometer car supplied to the Italian State Railways for measuring tractive and buffing values

THE preceding instalment in this series, in our March 1 issue, gave a general account of the arrangement and equipment of the Amsler type dynamometer car for testing electric locomotives. Details will be given in this and succeeding instalments of cars of fairly recent construction supplied to various railways.

The Italian State Railways car is capable of measuring tractive and buffing values up to a maximum of 45 tons. The electrical equipment was designed by Amsler & Company and supplied principally by Trüb, Täuber & Company, of Zurich, in connection with Siemens und Halske, Berlin, and Tecnomasio Italiano Brown Boveri, Milan. Current is taken over cables from the locomotive where the auxiliary resistances and shunts are installed. Feeds to the various voltage-measuring instruments are taken from resistances connected as potentiometers between the 3,000-volt contact line and earth; the current-measuring feeds come

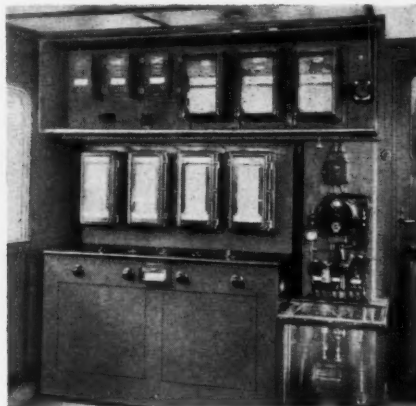
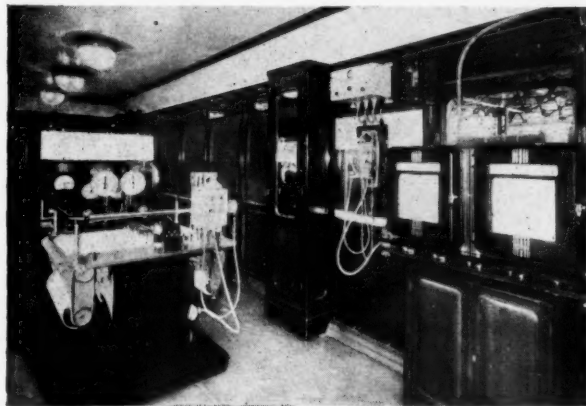
cuit, which have a non-return device, are fitted with a single totalisator, measuring the energy in one sense only. Their current windings, having only a small voltage difference at their shunt terminals, must necessarily work under heavy amperage and have large cross-sectional leads; but that applying to the auxiliary services has its current winding connected direct to the general circuit of the auxiliaries without any shunt.

All electric instruments are brought together on a spring-suspended board mounted behind the operator, nearly in the middle of the car. Its right-hand half carries the three recording instruments—voltmeter, ammeter, and wattmeter—the left-hand half the three kWh-meters which are ironless. This division is justified not only by the very different mass and moment of inertia of the two groups of instruments, but is also imposed by the necessity of constructing the part carrying the kWh-meters of aluminium

effected by bolts and nuts on copper blocks of large contact area. All the cables in two sections (a fixed half-length laid in the car and a movable half-length between the front wall of the car and the shunts on the locomotive) inclusive of joints (sweating lugs, coupling blocks) are calibrated together with the corresponding measuring instrument and shunt or resistance.

The diagram charts of the recording instruments are driven by a shaft running under the floor from the dynamometer table itself, thus advancing both electric and mechanical diagrams in unison. The paper drum shafts of all the recorders are in alignment and coupled by insulated clutches. The transmission from the axle to the recording panel is telescopic, to allow for variations of movement, and includes two cardan joints. An electro-magnetic marker is provided on the margins of all the recorder charts, one being operated as a function of the time given by the clock and the other as a function of the distance travelled or of some other reference signal.

As the recording apparatus for d.c. may be accidentally subjected to high tension should trouble develop in the internal



Left: Interior of car showing recording table. Right: Electrical measuring instruments at top, with temperature and flue gas recorders below

from shunts on the low-tension side between the traction motor groups; or between the motors driving auxiliary apparatus, such as fans and air compressors, and earth. All measuring circuits are thus low-voltage ones.

The electrical measuring equipment consists of:—

Indicating and recording voltmeter for the traction motors, 0-4,000 volts;

Indicating and recording ammeter for the traction motor current, 0-1,000 or 0-500 amp., depending on the shunt used;

Indicating and recording wattmeter for received and recuperated energy, 0-3,000 or 0-1,500 kW, according to the shunt used. (These three recorders are of the moving coil type, exactly balanced statically and dynamically).

kWh-meter for received energy.

kWh-meter for recuperated energy.

kWh-meter for the auxiliary machinery (fans, air compressor, and so on.)

The recording ammeter and wattmeter are each provided with a current-reversing switch for transforming the negative deflections of the pointer into positive deflections when running with the regenerative brake control. A scale with central zero point being thus dispensed with, the whole length of the scale is available under all conditions.

The kWh-meters for the traction cir-

cuit, to render them immune from the magnetic influence of their fixings, whereas the moving-iron instruments, not being sensitive to external magnetism but being rather heavy, are attached to a stiffer and more resistant steel sheet.

Each half of the board is earthed individually; insulated wires lead from it to specially designed junction boxes at each end of the car, to enable records to be taken when running in either direction, the locomotive being connected by flexible cables to the corresponding junction-box. The leads to voltmeter, ammeter, and wattmeter and the voltage windings of the three kWh-meters are in one flexible 10-way leather-sheathed cable.

The fan-out of the cable from the locomotive is connected at the junction boxes to the corresponding terminals of the fixed half-cables either end of the car by bolted and sweated lugs. The current windings of the three kWh-meters are connected to the shunts on the locomotive by three two-core flexible cables of heavy cross-section, well insulated and braided. Connection between the 6 cables from the locomotive to the terminals of the half-cables at the junction boxes is, in order to ensure constant resistance,

locomotive circuits, special safety devices have been provided for the protection of the operating staff. These consist of:—

1.—Isolating the instruments when the instrument case is opened to change the recording chart, through a multipolar switch interlocked with the handle of the glass cover.

2.—Preventing a dangerous high-tension reaching the metal parts of the table through the circuits of the time and space markers. For that purpose the markers are actuated by 40-cycle single-phase current, furnished by a small converter fed by a 24-volt storage battery, with separating transformers to prevent any d.c. reaching them. The a.c. circuit is closed or interrupted in the primary windings of the transformers by relays operated on 12-volts d.c. from the table. The rotary converter and isolating transformers are in a cupboard in the vicinity of the instrument board.

The car is also equipped with a set of portable high-precision electric instruments (voltmeter, ammeter, and wattmeter, with their additional resistances and shunts) for checking the recording instruments and kWh-meters from time to time.

(To be continued)

* Part 1 appeared in our March 1 issue

A Special Purpose Planing Machine for Points and Crossings

Installed at Crewe Works, L.M.S.R.

A SPECIAL purpose planing machine for rail points and crossings has recently been installed at the Crewe works of the L.M.S.R. This machine, which was made by John Stirk & Sons Ltd., Halifax, is of an all-electric type designed specially to deal with the grades of steel used in points and crossings, and it has several features already embodied in the standard "Hiloplanes" made by this firm.

For example, the Stirk split field drive is incorporated, this being a modification of the Ward-Leonard system, providing variable-cut speeds and constant pull to

All possible speed requirements can be met, as there are no less than eleven feeds in close sequence, and the feeds operate through the gear case at the foot of the right-hand housing, by means of the single- and half-turn motor which also provides rapid power traverses to the two cross-slide heads.

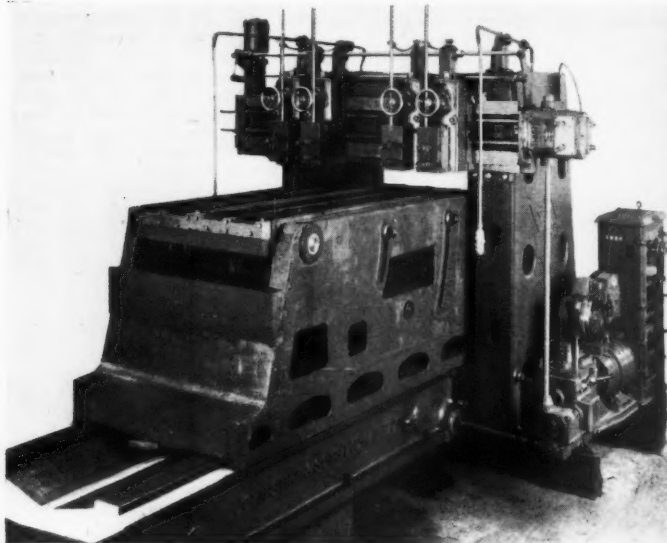
Of specially designed box section, the table carries an upper member capable of a tilting adjustment up to 20 degrees, and it can carry four British rails, which are machined simultaneously. Worm gears and screws inside the table are provided to give rapid adjustment of the angle and

clamped in the steel-bottomed grooves with which the table is provided. Automatic tool relief on the return stroke is provided by a solenoid located at the far end of the cross-slide.

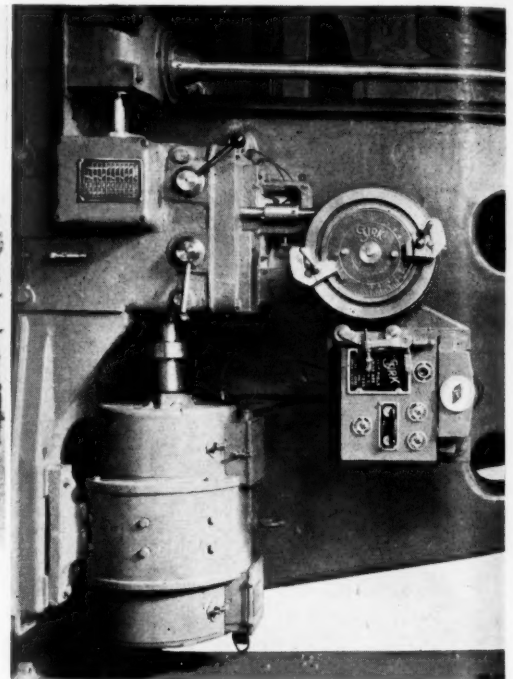
The leading dimensions of the machine are as follow:—

Maximum length of stroke	...	7 ft. 6 in.
Minimum " "	...	6 in.
Width of tilting table	...	3 ft. 10 in.
Cutting speed range	...	20-60 ft. per min.
Return " "	...	60-120 " "
Number of feeds	...	11
Range of feeds	...	1/4 in. to 1/2 in.
Primary motor (a.c., 400 volts, 3-phase, 50 cycles)	...	87 b.h.p.
Total weight of machine	...	35 1/2 tons

In the machine shown in the accompanying illustrations the stroke may be varied from a minimum of 6 in. to a



Above: General view of all-electric planing machine



Right: Close-up view of speed and feed controls

the table from 20 to 60 ft. per min., with independent return speeds up to 120 ft. per min. Transmission from the reversing motor is effected by the keyless helical gear train, the single hardened and ground steel spiral being cut integral with the shaft, and running in oil. The gear meshes with a table rack of high-tensile forged steel.

are actuated by a handle which is placed on the square end of the shaft shown on the operator's side of the machine.

Two clapper boxes are carried on each of the two cross-slide tool heads; one of each of these boxes is adjustable sideways to facilitate the correct pitching of the four tools to the fixed positions of the four rails. The rails themselves are

maximum of 7 ft. 6 in. in length, the stroke itself being governed by adjustment of control "dogs" which are mounted on a revolving disc operating the reversing switch. The reversing switch in turn is embodied in the patent master switch which also controls tool relief in addition to the direction of the feed and power traverses.

CUSHIONS FOR CARRIAGE SEATS.—A separate factory for producing Dunlopillo latex foam cushioning is now being got ready at Walton, Liverpool, by the Dunlop Rubber Co. Ltd. This type of cushioning is widely used for railway carriage seats, and there is also today a heavy demand for renovations and new seating in cinemas and theatres, and seating for buses, coaches and cars. The war has been a highly practical test of the durability of Dunlopillo and of its hygienic qualities, and the company is speeding up the equipment of the new factory in readiness for the first supplies of natural latex that are made available. The factory formerly

made footwear. The manufacture of footwear is being transferred to Speke, and Walton will produce the latex foam cushioning made before the war at Manchester and Fort Dunlop.

GOODWILL GESTURE TO DUTCH MUSICIANS.—When the 100-strong Concertgebouw Orchestra of Amsterdam visited Leicester on March 1, a friendly gesture by Mr. Plant, stationmaster, Leicester Central, L.N.E.R., in decorating the station with Dutch flags and bunting, resulted in his receiving a letter of appreciation from the agents of the orchestra. The letter read: "On behalf of the Concertgebouw Orchestra of Amsterdam, we desire to

extend to you and to your foreman, Mr. Burford, the heartfelt thanks and gratitude of the members for your most cordial reception and for the display of flags and bunting which were awaiting them upon their arrival at Leicester L.N.E.R. Station yesterday. We assure you that all the musicians were touched deeply by this gesture of friendship and hospitality, and we know that their first sight of Leicester was made the more impressive by your display of kindness and enthusiasm at the station, and we do feel that such a fine start did so much towards cementing a friendship between the two nations and with Leicester which will long remain in their minds."

RAILWAY NEWS SECTION

PERSONAL

Alderman John Cliff has been elected Chairman of the London County Council. Alderman Cliff is a member of, and Executive Officer for Staff & Staff Welfare to, the London Passenger Transport Board.

We regret to record the death, on March 21, at the age of 84, of Mr. Oliver R. H. Bury, M.Inst.C.E., who retired last December from the board of the London & North Eastern Railway Company, of which he had been a member since 1923, before which he had been a Director of the Great Northern Railway Company for ten years, and General Manager of the latter railway from 1902 to 1912.

Sir William Palmer, Chief Industrial Adviser to the Board of Trade, is to retire shortly.

We regret to record the death, on March 23, at the age of 63, of Mr. John Marchbank, General Secretary of the National Union of Railwaymen from 1933 to 1942, and from 1943 a Director of the British Overseas Airways Corporation.

Mr. J. R. C. Williams, Station-master, Paddington, Great Western Railway, is retiring on March 30.

We regret to record the death, on March 24, at the age of 75, of Lord Ponsonby of Shulbrede, who was Parliamentary Secretary to the Ministry of Transport, 1929-31.

Monsieur Maurice Lemaire has been appointed General Manager of the French National Railways, in succession to Monsieur Jean Goursat, who has asked to retire for reasons of health.

The Travel Association announces that Mr. W. E. Butlin, Managing Director of Butlin's Limited, has accepted an invitation to join the general committee of the Association.

R.C.H. CONFERENCES

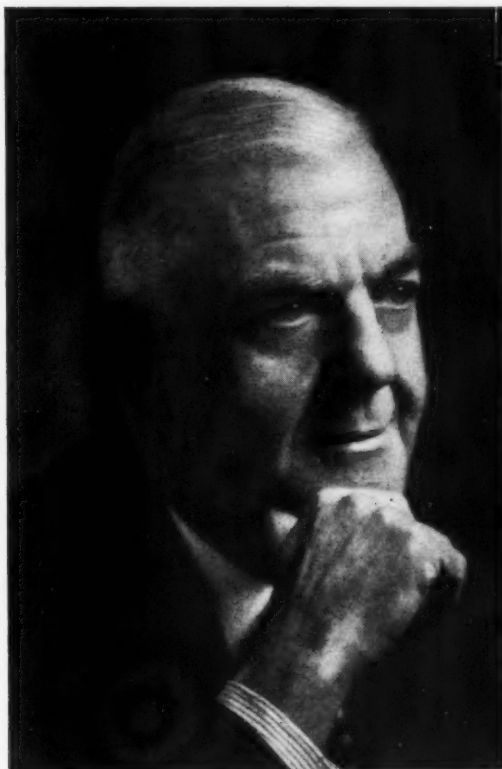
Mr. E. M. Rutter (Superintendent, North Eastern Area, L.N.E.R.) has been elected Chairman of the Operating Superintendents' Conference at the Railway Clearing House for 1946, in succession to the late Mr. R. Gardiner; and Mr. A. E. Hammett (Commercial Superintendent, Southern Railway) has succeeded the late Mr. F. W. Lampitt as Chairman of the Goods Managers' Conference for 1946.

The Elastic Rail Spike Co. Ltd. announces that Mr. L. S. Sanson, B.Sc. (Eng.), A.M.Inst.C.E. (who has been released from the Army after 6½ years' service, chiefly overseas, concluding with the appointment of Deputy-Director of Transportation, Calcutta), has joined the board and has been appointed Managing Director. Mr. H. J. Green, O.B.E., M.C., M.Inst.C.E., M.I.Mech.E. (who relinquished at the end of 1943 his position as Chief Engineer, Civil, L.P.T.B.), has been appointed a Director. Mr. E. E. Garrard, A.M.I.E.E. (lately of Crompton Parkinson Limited), has joined the company.

Mr. R. G. Davidson, F.S.A.A., A.C.I.S., M.Inst.T., who, as recorded in our February 15 issue, is retiring on April 1 from the position of Chief Accountant, Southern Railway, began his railway career in the Secretary's Office of the London & South Western Railway. In order to widen his experience, he resigned from railway work for the purpose of being articled to a firm of chartered and incorporated accountants, passed all the examinations,

when he was appointed Assistant Accountant, Southern Railway. In February, 1925, he was made Joint Accountant with Mr. A. Howie. Mr. Davidson remained Joint Accountant until March 31, 1940, when he was appointed Chief Accountant. Mr. Davidson took a leading part in the negotiations and settlement of the financial arrangements in connection with the amalgamation and absorption schemes incorporating the Southern Railway Company under the Railways Act, 1921. Arising out of the Southern Railway (Road Transport) Act, 1928, he also was engaged on the financial negotiations connected with the acquisition by the Southern Railway of a considerable shareholding interest in various provincial bus undertakings, and was elected its representative Director on the boards of the following companies: Aldershot & District Traction Co. Ltd., East Kent Road Car Co. Ltd., Hants & Dorset Motor Services Limited, Maidstone & District Motor Services Limited, Southdown Motor Services Limited, Southern National Omnibus Co. Ltd., Wilts & Dorset Motor Services Limited. Since the commencement of Government control in 1939 Mr. Davidson has been a member of the R.E.C. Accountants' Committee and of the "Rules" Committee constituted under the provisions of the Railway Control Agreement. Under the same agreement he also was appointed a Managing Trustee of the Southern Railway Trust Fund dealing with the investment of unexpended arrears of maintenance moneys. Mr. Davidson has been an Honorary Auditor of the Railway Benevolent Institution for many years, and Honorary Auditor of the Southern Railway Orphanage at Woking for over 36 years.

The late Mr. J. H. Parker, who retired shortly before his death from the position of Chief Electrical Engineer, L.P.T.B., left £8,298.



Mr. R. G. Davidson

Chief Accountant, Southern Railway, 1940-46

and became in due course a qualified Incorporated Accountant. Subsequently he spent the greater part of a year travelling in the United States and Canada, and some years later he revisited America, and in Japan and the Far East was afforded special facilities for the study of the railway systems of those countries. Later he also made an extensive tour in South Africa and Rhodesia. On his first return from the United States, Mr. Davidson, after serving for some little time with a firm of chartered accountants, was appointed, in 1909, General Assistant to Mr. F. Hartnell, then Accountant of the London & South Western Railway. He was placed in charge of the alteration and revision of the accounts of all departments of the company necessitated by the Railway Companies (Accounts & Returns) Act, 1911, and in 1914 became one of the original Investigators appointed on behalf of the Government to examine railway companies' accounts during the period of Government control. When Mr. A. E. Newhook was appointed Accountant, London & South Western Railway, Mr. Davidson became Principal Assistant, and he held that position until January, 1923,

The King, at Buckingham Palace on March 12, conferred the honour of knighthood on:—Mr. Wallace Alan Akers, C.B.E., Director of Atomic Bomb Research, Department of Scientific & Industrial Research; Director, Imperial Chemical Industries Limited; Mr. Donald Coleman Bailey, O.B.E., A.M.Inst.C.E., Acting Superintendent, Experimental Bridging Establishment, Ministry of Supply; Mr. George Perrin Christopher, Director, Commercial Services, Ministry of War Transport; Mr. Norman Victor Kipping, lately Head of the Regional Division, Ministry of Production; Director-General, Federation of British Industries; Mr. William Lennox McNair, K.C., Legal Adviser to the Ministry of War Transport; Commander Edward Robert Micklem, C.B.E., R.N. (retired), Deputy-Chairman, Vickers-Armstrongs Limited; Mr. Frank Ewart Smith, M.I.Mech.E., Chief Engineer & Superintendent, Armament Design Department, Ministry of Supply; Director, Imperial Chemical Industries Limited; Mr. William George Verdon Smith, C.B.E., Chairman, Bristol Aeroplane Co. Ltd.; Mr. Thomas George Spencer, M.I.E.E., Managing Director, Standard Telephones & Cables Limited; Mr. Alexander Murray

Bourne End Accident, L.M.S.R.



General view of the scene shortly after the accident at Bourne End on September 30, 1945
(See editorial article, page 340, and accident report summary, page 357)

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Ministry of War Transport Accident Report

Bourne End, L.M.S.R., September 30, 1945

Stephen, M.C., Chairman. Alexander Stephen & Sons Ltd., Shipbuilders & Engineers, Glasgow; Director, London Midland & Scottish Railway Company; Mr. Theodore Eastaway Thomas, C.B.E., lately General Manager, London Passenger Transport Board; Mr. Charles Geoffrey Vickers, V.C., Director-General, Economic Intelligence Division, Foreign Office; Member, London Passenger Transport Board. His Majesty's approval of these knighthoods was signified on January 1, 1946.

Mr. L. St. L. Pendred, C.B.E., is retiring on April 1 from the position of Editor-in-Chief of *The Engineer*.

We regret to record the death on March 20, at the age of 71, of Mr. A. C. H. Bell Thompson, Managing Director of Stenol Limited.

Mr. Edward C. Greig, who has held the position of Chief Labour Superintendent, United Steel Companies Limited, for the past 24 years, is resigning from that position for reasons of health. His successor is Mr. Desmond Halahan. Mr. Greig will continue to serve the company as Labour Consultant.

We regret to record the death on March 21, at the age of 76, of Mr. T. Christopher, who was District Superintendent, Nottingham, L.N.E.R., from January, 1926, to December, 1931. Mr. Christopher's son, who has just returned to civil life after six years in the Forces, is Chief Trains Clerk & Chief Controller to the District Superintendent, Leeds, and his nephew is Mr. J. W. Christopher, the present Assistant District Superintendent of the L.N.E.R. at Nottingham.

FUNERAL OF MR. JOSEPH HARRISON

The funeral of Mr. Joseph Harrison, Stationmaster, Euston, L.M.S.R., whose death we recorded last week, took place at the Golders Green Crematorium on March 22. A large number of wreaths was sent from the wide circle of persons with whom Mr. Harrison came into contact. Among the senders were passengers, newspapers, shipping companies, R.T.O.s and the Y.M.C.A., and colleagues and staff. Among those present at the funeral were:

L.M.S.R.: Messrs. R. A. Riddles, Chief Stores Superintendent; C. Johnstone, Assistant Chief Commercial Manager (Passenger) (representing Mr. F. A. Pope, Chief Commercial Manager); J. O'Neill, Acting Advertising & Publicity Officer (representing Sir Ralph Glyn); A. C. F. Calladine, Passenger Trains Assistant to Chief Operating Manager (representing Mr. T. W. Royle, Vice-President, Mr. S. H. Fisher, Chief Operating Manager, and Mr. S. E. Parkhouse, Assistant Chief Operating Manager); W. Ewing, Acting Assistant District Passenger Manager, Euston (representing Sir Francis Joseph and Mr. R. Bagwell, District Passenger Manager, Euston); W. B. Richards, Chief of Police; A. P. Hunter, Assistant Divisional Superintendent of Operation, Crewe (representing Mr. J. W. Watkins, Divisional Superintendent of Operation, Crewe); F. S. Darby (representing Mr. G. Morton, Chief Accountant); H. Yates (representing Mr. A. L. Castleman, London District Goods Manager); W. P. Keith, Assistant to Chief Hotels Superintendent; George Dingley, Divisional Trains Office, Euston; A. H. L. Cuany, Manager, Euston Hotel; F. G. Hewitt, Stationmaster, St. Pancras; T. Smith, former Stationmaster, Euston; and many of Mr. Harrison's colleagues and staff; also Lt.-Colonel F. Ward, Scots Guards, H.Q.M.G. Movements; Major W. A. Boyd, Scots Guards, R.T.O., Euston; and representatives of the G.P.O. and Y.M.C.A.

Lt.-Colonel Sir Alan Mount, C.B., C.B.E., Chief Inspecting Officer of Railways, inquired into the serious accident which occurred just after 9 a.m. on September 30, 1945, at Bourne End on the L.M.S.R., when the 8.20 p.m. express, Perth to Euston, consisting of 15 bogie vehicles, drawn by 4-6-0 engine No. 6157, took the crossover junction from up fast to up slow at an excessive speed and was derailed. The engine was overturned into a field 9 ft. below the line; six of the leading seven coaches were piled up in rear of it and destroyed. Only the last three vehicles remained on the rails. There were 398 passengers (42 in sleeping cars); 38 persons were killed, including the driver and fireman, and 5 fatally injured. Of these 43 fatalities 5 were other railway servants, of the Royal train dining-car staff, travelling as passengers. Altogether 124 persons were injured or complained of shock, 64 seriously. A guard and a car attendant were shaken and bruised. Traffic was not resumed on all four roads until 2.50 a.m. on October 2. Special measures had to be taken to lift the engine and this could not be effected until October 28. There was no wind and it was a cloudless morning. The rising sun was in the driver's face, alternating to the left and right of the signals. Enginemens of the preceding train (10 min.) and others

the crossover junction movement is reversed. The repeating and proving apparatus is complete and comprises an audible warning for giving notification of certain failures. There was no reason to suppose that there was any failure of the signal, passed at double yellow by another express 10 min. before, and the signalman had pulled the lever to display this aspect before the Perth train reached Berkhamsted, the station in rear. The indications seen by the driver were those shown on our diagram.

RULES APPLYING

The rules applying to the double yellow aspect on the L.M.S.R. are as follow:—

...Rule 35 (b): . . . In some cases colour-light signals will exhibit two yellow lights. This indication means—Pass next signal at restricted speed, and if applicable to a junction may denote that the points are set for a diverging route over which the speed restriction shown in the Appendix applies.

This rule comes under the general heading "Fixed Signals." Under the heading of "Multiple-Aspect Signals" appears Rule 43, the second paragraph of which states that two yellow lights indicate that a driver must be prepared to "pass next signal at restricted speed. . . ." the word-

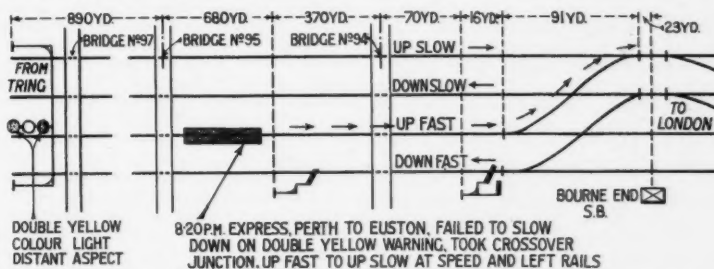


Diagram illustrating circumstances of the derailment at Bourne End, L.M.S.R., on September 30, 1945

said visibility was exceptionally good, but enginemens who passed 30 min. before the accident referred to slight autumnal local haze at the distant signal. The speed restriction over the crossover is 20 m.p.h. and the train was being diverted because of engineering operations in Watford Tunnel. The driver was an experienced and reliable man, whose failure to reduce speed in accordance with the signal indications remains unexplained.

The arrangement of lines and signals concerned is shown, as far as is essential to an understanding of the case, on the accompanying diagram. It was considered that the engine might have negotiated the crossover at 40 m.p.h., as a maximum the results of the derailment indicated a speed considerably in excess of this.

THE DISTANT SIGNAL

The distant signal—together with the companion one for the up slow—is a colour light, installed in replacement of splitting semaphores which stood 670 yd. nearer to Bourne End. It has a normal yellow unit at bottom, a green above and an auxiliary or reserve yellow unit on top, which lights if the normal one fails. The top unit is also lighted, displaying double yellow, when the relative lever for

ing then continuing exactly as given in Rule 35 (b) above.

THE APPROACH OF THE TRAIN

The train left Crewe 1 hr. 22 min. late and speed was reduced for signals on several occasions and also for permanent way restrictions. It stopped at Rugby and was checked at Hillmorton, Kilsby, through Northampton and over the junction at Road. Timings showed that the speed approaching Bourne End was at least 60 m.p.h. The Berkhamsted signalman observed the enginemens in their position: the driver was sitting and did not wave. Instead of "train out of section" the "obstruction danger" signal was received. The previous train was passed from fast to slow at Bourne End and the crossover remained set for that movement. The signalman there stated emphatically that he pulled off for the Perth train on getting "train approaching" and observed his distant repeater change to "off," showing the correct aspect to be displayed. He heard the train approaching faster than usual and saw the engine at overbridge 94, 200 yd. away. He did not hear brakes applied and saw no sparks, neither did he see driver or fireman or hear any whistle. He could not say whether steam was

applied, but estimated the speed at 40-45 m.p.h., compared with 60-70 m.p.h. for the fast line. At any rate, it was "lower speed than the normal for a train travelling straight through." He watched the train from the bridge to the point of derailment, an engine length, he thought, beyond the crossover. Technical examination of the distant signal circuits and equipment some two hours after the disaster confirmed the signalman's evidence regarding the displaying of the double-yellow aspect.

Evidence was given by certain passengers and railway staff travelling on the train as to the speed and whether any brake application was felt. The Crewe running shed foreman stated that the driver had agreed to take the train, for whom he had nobody available, and was a "very good conscientious driver and very willing." The fireman had volunteered to accompany him. The assistant foreman said the driver enjoyed good health and both he and others testified to his temperate habits. He had signed for the fortnightly notices for September 22 and October 5 and various supplementary ones. He was seen by a locomotive platform regulator at Crewe to be reading the notice containing the information about the diversion at Bourne End, and this man said that the driver was well-known for his methodical way of looking after notices, etc., and for being seen with them in his hand when signing on and off. He was "in his usual state of good health and was in good spirits . . . a temperate man, very temperate. . . . He was not a man whose mind was likely to wander and he was not subject to fainting." A careful examination of the engine and all relevant facts went to show that there was nothing in its condition which could have been a contributory cause of the accident. The driver—with 38 years' service and a driver since July, 1929—had an exemplary record and was constantly driving over the road. The last time he was diverted from fast to slow was at Hatch End on September 16, a fortnight before, when he received double yellow at the distant. The fireman also had an excellent record. Members of the driver's family could not recall any signs of ill-health in him that might be relevant to the case.

CONDITIONS OF VISIBILITY

Sir Alan Mount considered very carefully the effect of the rising sun on the visibility of the signal aspects and heard a good deal of evidence bearing thereon and on signal visibility generally. The driver of the preceding train, an express from Glasgow, said it was "an exceptionally fine morning with good visibility, and there was no sign of fog at this point." As he approached Bourne End at about 60 m.p.h. "the sun was just above the distant signal and to the left of it, and it did not stop me seeing the signal." His fireman saw it first and informed him "two yellows." Had he not been able to see it himself he would have treated it as a danger signal. He had no difficulty in viewing the next signals and passed through the junction at about 15 m.p.h. He further said: "I rely on these double-yellow signals at this particular place, and the double-yellow signal takes the place of double semaphores that used to be there. I rather like these colour-light distants, and I think they are a big improvement on the semaphores, particularly at night and in foggy weather. I have no difficulty in finding them whether they are on the ground or higher up.

This distant signal has been put further out, and it is an advantage as regards stopping, as we have more distance to stop in; in fact, the signal is in a better position today than the old semaphores used to be." (He had driven the engine of the Perth train to Carlisle some three weeks previously and said it was in "first class order.")

On the other hand the driver of a fish train which approached Bourne End 30 min. before the Perth train, was said to have remarked to another man, before hearing of the accident, that he had difficulty in seeing the double yellow there "owing to a slight haze and the sun." He said he approached at 35 to 40 m.p.h. and that "there was a ground fog and the sun shining sort of blocked out the signal; the sun was more in front of me, and it would be behind the signal from my cab window. I could not really tell you whether the sun was right or left, but it was just in front of my face. My fireman saw the signal first and he held his 2 fingers up, indicating two yellows. He saw them before me, and I was just underneath before I saw the signal, but I was looking out all the while . . . I just got a glimpse of one yellow, but my fireman said there were two yellows . . . It was a sort of haze and the sun over the top of it made it worse. We were not very far off when the fireman told me of the position of the signal. I had no difficulty in seeing the outer and inner homes."

His fireman confirmed this and another driver said he had had trouble from the sun at Willesden the same morning, concluding by observing that "it is common knowledge among Watford drivers that the sun interferes with the sighting of these colour-light signals at certain times of the day. I have come up with the Northampton coaches, and when I have sighted the distant signal at Castlethorpe, which is a colour-light signal. I have had to brake to make certain. I prefer the semaphore type of signal during daytime."

Sir Alan travelled on the footplate of a fast train on November 2 when the driver, a man of wide experience, described the angle of the sun during the previous weeks, and said that view of signals was affected in the neighbourhood of Berkhamsted for about half-an-hour in the morning. He referred particularly to the difficult conditions on the previous day as the result of the brilliancy of the sun and autumnal temperature, when his eyes watered through having to expose his face beyond the shield on the cab side. He had never failed to see the signals, and he emphasised his insistence on training his fireman to be the first to view the Bourne End distants. He looked on the double-yellow diversionary indication as necessitating the train being brought under control and reducing speed to not much more than 25 m.p.h. at the outer home. He also referred to the care with which drivers' complaints were always investigated as regards the sighting of signals, and was of the opinion that having the sun behind him and shining on the lens of a colour-light signal presented little difficulty, as compared with the sun shining towards him at a low altitude.

CHIEF INSPECTING OFFICER'S CONCLUSION

The facts of the case being not in dispute on any essential point the principal part of Sir Alan Mount's report relates to his conclusion and his recommendations. He finds that the acceptance of the train was in order, the signals were cleared for it in accordance with instruc-

tions and he feels no doubt that the double-yellow aspect was displayed at the distant signal. No responsibility rests on the signalman. Except that signals were passed at danger in the Leighton Buzzard accident of March 22, 1931, the two accidents have certain features in common. Both occurred when expresses were being diverted from fast to slow line on Sunday, because of engineering works. In both cases the enginemens were killed and the reason for their failure remains unexplained. Speed at Leighton Buzzard could not have been less than 55 to 60 m.p.h. and must have been much the same at Bourne End, where the death roll of 41 passengers was due largely to the engine falling down the bank. Visible warning should have been conveyed to the driver 1½ min. before he reached the junction, a long time in which to account for his inaction to reduce speed from, say, 60 to 20 m.p.h. He was a most reliable man and had an equally reliable fireman. A second reminder should have had effect before the outer home was passed, when the inner home came into view 851 yd. from the junction, in which distance a full brake application could have stopped the train. It seems doubtful whether the brake was applied before the junction; certainly no whistle was blown. The driver appears to have continued his approach in ignorance of any danger, at any rate until within a very short distance, and although the signalman referred to the speed as being less than normal for the straight road any suggestion that the 20 m.p.h. restriction was misjudged can hardly be sustained.

It is relevant to consider whether anything untoward can have transpired when the regulator was closed on the double-yellow aspect being sighted, but the signalman and another witness noticed nothing unusual and, so far as subsequent examination disclosed, no mechanical defect appears to have developed in the engine which might have distracted attention and prevented operation of the controls. The engine was reported in first class order two or three weeks previously. Shed repair cards were scrutinised; there were no reports against boiler or footplate fittings.

Suggestions were made in letters addressed to Sir Alan regarding the cause of the accident and preventive action, such as applying Rule 39 (a) to such out-of-course diversions, but apart from any action by a signalman, the report points out that trouble may arise or be inevitable if a driver does not appropriately interpret signals, whether they are at warning or—as at Leighton Buzzard—at danger. No good purpose can be served by conjectural explanations of what happened on the footplate, but the report draws attention to certain unusual features which are considered to require notice. It was the driver's fourth consecutive Sunday duty and he had worked for varying periods on 26 days without a break, as is set out in a table accompanying the report. It was not a case of long hours on duty with the minimum of rest, the wartime experience of many enginemens, but the action of certain men in not making themselves available on Sundays must have resulted in greater strain being borne by others. The position of the sun in relation to the signals is another point, although Sir Alan finds it hardly conceivable that so capable a driver could have been seriously affected, even on this occasion, to the extent of, say, imagining green to be displayed instead of double yellow, still less of taking a chance and not slow-

ing down after missing the signal altogether. The double-yellow aspect, used to announce a slow speed diversion, over a minute away, did not, whatever the reason, have the intended cautionary effect. This is referred to again below.

THE GUARD'S RESPONSIBILITY

The guard was not at his post as the train approached Bourne End but was having a cup of tea in the pantry in the 13th vehicle; he had been through the train and stopped there on his way back. He knew they were to be diverted there, but said it did not occur to him to watch for a reduction of speed. He had full confidence in the driver. He did not mention the diversion to him when speaking to him at Crewe. The train was 1 hr. 22 min. late leaving that place and there was little time for conversation. He had been working over the road for 3 years and in that time never had occasion to make an emergency brake application. He contended that had he observed the distant signal he would have waited to apply the brake until he viewed the inner home, by which time it would have been too late to be effectual. He was the only man who might have taken preventive action if it occurred to him, had he been looking out, that the driver was not going to obey the speed restriction. His evidence was entirely frank. He has been three years passenger guard at Euston and has a good record. Sir Alan doubts whether he would have appreciated the position, had he been in his van, and does not think blame should necessarily be attached to him.

He also discussed with the company's officers the application of the well-known Rule 148 (a) which reads:—"When passenger trains are approaching important junctions, terminal stations, and stations at which they are booked to stop, the guards must carefully watch the running of the trains and take any action that may be necessary. They must also keep a good lookout when leaving stations, and, as far as practicable, on other parts of the journey."

OBSERVATIONS REGARDING SIGNALLING

The report recommends that the companies be asked to consider certain comments before the meaning of the double-yellow indication is standardised in relation to both 2-aspect semaphore signalling and the multiple-aspect system. This also involves review of the provision of splitting distant in connection with low speed diversions from high speed routes, about which there has been controversy in the past. Such review is the more necessary now that progress in the changeover from semaphores to colour-light distant is likely to be accelerated with greater availability of electricity and the desire for longer warning in preparation for higher train speeds.

As the L.M.S.R. rule stands, the double yellow indication may denote that it applies to the diverging route at a junction. The reason for applying this indication in semaphore areas, rather than adhering to separate signals which repeated, both as regards position and aspect, the previously existing splitting distant, was that the company felt that a colour-light displaying green in the diverging signal was undesirable in such circumstances. The double yellow indication was adopted as being more restrictive and so distinctive as to ensure reduction of speed preparatory to diversion, and was popular with drivers. Exceptional circumstances prevail at Bourne End in that operation of the distant signal to a less restrictive indication than

caution was desirable, having regard to the density of traffic, to the necessity for reducing delay to the minimum in approaching the junctions, and to the fact that some trains a day regularly have to use the crossover roads.

Nevertheless, it would be preferable as a matter of principle, if double-yellow could invariably mean one thing everywhere, namely, that the next signal ahead shows yellow and the one beyond that red—its original function and intention in multiple-aspect areas.

The actual words in the L.M.S.R. addition to Rule 43 are: "Two yellow lights indicate that he (the driver) must be prepared to pass the next signal at restricted speed." The Chief Operating Manager considers that for many years to come the majority of track-mileage will remain signalled under the 2-aspect system. To confine the meaning in such areas to the one specific purpose, he proposes that the L.M.S.R. addition to Rule 35 (b) (ii) should be modified as follows—

Except where colour light multiple aspect signalling is in operation in colour-light areas, the exhibition of two yellow lights at a colour-light distant signal applicable to a junction denotes that the points are set for a diverging route over which the speed restriction shown in the appendix to the working timetables applies.

The dual meaning which the existing rule gives to this indication would be removed, so far as semaphore areas are concerned; but at the same time, as a corollary, it appears essential that the company should ensure that in multiple-aspect areas, it should have the originally intended single meaning referred to above. The corresponding wording of Rule 43 should be changed to the effect that yellow indicates "be prepared to stop at the next signal"; and double yellow, "be prepared to find the next signal showing yellow."

The company's officers favour the provision of splitting outer home semaphores, which would also meet the possible weakness that the single semaphore (at "clear" when first seen) may have, as an alternative, misled the driver into thinking that he was destined to travel over the straight road—or rather into forgetting that he was, in accordance with the Fortnightly Notice and the double yellow indication, to be routed over a very slow speed junction. It is also true that this additional signal would have given an earlier second indication of the diversion, if or by 300 yd.

It appears, however, to be a retrograde step to do that, either to confirm the double yellow indication or to safeguard the possibility that only yellow is displayed. It is contrary to the spirit, and indeed the wording of paragraph 2 of the Ministry's Requirements; in certain circumstances it might even lead the driver to assume that he had passed the junction when, in fact, he had not reached it. It seems that unless two distant are provided, the existing signal ought to be no less restrictive than yellow, and it should be followed by control on the outer home for all trains in the case of diversion, either by regulation or by approach locking. The alternative would appear to be to provide a colour-light 3-aspect outer home, with approach control on the junction signal; there are, however, some objections to this, as tending to combine two different systems of signalling, namely 2-aspect semaphore and multiple-aspect colour-lights.

Since the provision of colour-light distant at Bourne End all trains making diversions, whether "booked" to do so or not, have been given clear signals with the double yellow warning, if running under full line clear. In the meantime a

revised regulation dated December 16, 1945, has been issued to ensure that the distant signal is kept at yellow and that the stop signal is not taken off until the train is close to such signal, at any rate for out-of-course diversions.

REMARKS AND RECOMMENDATIONS

In view of the circumstances of this accident, and an early return to pre-war speeds, it is recommended to consider whether experience and present-day custom justify more precise definition of Rule 148 (a) or whether the responsibilities of passenger train guards are sufficiently well understood as to need no further emphasis. Sir Alan feels that the rule should be strengthened by adding "particularly when they know that the train is being diverted from its usual path."

The report devotes much space to the question of automatic train control, and the railways are again recommended to undertake the review already proposed to them after the Ecclefechan accident—where distant, outer home and inner home semaphores were ignored—with the object of initiating the introduction of warning control on main lines, provided the equipment is designed to conform to multiple-aspect signalling. The audible "clear" signal should not be given if speed has to be reduced. The signalling recommendations are that consideration be given to the following:—

(a) The use, and uniformity of meaning, of the double yellow indication in relation to both 2-aspect semaphore and multiple-aspect colour-light signalling.

(b) Retarding the clearance of stop signals when slow speed diversion is required from a high speed route, to apply to a train following its regular booked route as well as to that diverted out-of-course; as regards the latter, revised instructions were given on December 16, 1945.

ACCELERATED LONDON-BRUSSELS SERVICE.—The Southern Railway announces that on and from Monday, April 15, a saving of 71 minutes will be effected on the London-Brussels service via Folkestone and Ostend. Passengers will leave Victoria at 9.0 a.m. instead of 8.0 a.m. as at present, and the arrival in Brussels will be at 8.35 p.m. The service will operate three times a week, leaving London on Tuesdays, Thursdays and Saturdays.

RELEASE OF GOVERNMENT SCIENTISTS.—During the war the Ministries of Supply and of Aircraft Production drew heavily on the scientific man-power of the country for their research establishments. The universities, the teaching profession and industry contributed many of their best men to assist in the evolution and improvement at maximum speed of weapons and aircraft, with all their associated equipment; and a good proportion of the yearly outflow from universities and colleges also was absorbed on this work. Many have now returned to their former posts, but fundamental and industrial research and teaching are still short of scientific personnel. Further large reductions are being made at the research establishments of the Ministries, which will effect the necessary adjustment between their own staffs and those required elsewhere; and, concurrently, the Ministries are re-organising their staffs on the lines of the Government's plan for the Scientific Civil Service. The result will be the formation of a strong body of highly-qualified scientists engaged in research on armament, aeronautics, and the civil branches of the Ministries' activities.

Coras Iompair Eireann

Critical wartime fuel position—Transport co-ordination plans—Diesel-electric construction proposed—All passenger trains may be diesel-hauled—Reduced rates to meet competition

The annual general meeting of Coras Iompair Eireann (Irish Transport Company) was held at the Gresham Hotel, Dublin, on Thursday, March 14. Mr. A. P. Reynolds, Chairman of the company, presided.

The Chairman, in the course of his speech, said: Ladies and gentlemen, you have before you the accounts—presented in the commercial rather than the railway form—for the first year of the company's life, and, together with your directors' report, you have the right to accept or reject them as you will. I emphasise your right to do this because it is so often said that transport in this country is a State-controlled monopoly. This is quite wrong. The Act of 1944 did not nationalise transport—if it did you would not be here—nor did it give this company a monopoly. It gave it the task of providing the backbone of public transport and imposed on it an obligation to accept the unprofitable low-grade traffics which some others engaged in the industry may refuse; and the effect of this obligation is clearly shown in the railway revenue account, wherein a gross £5½ million produced a net revenue of only £221,000, or 4 per cent. on the turnover.

The total revenue from all sources amounts to just under £9,000,000, on which, after providing for depreciation and debenture interest, was earned a net £812,000 or 9 per cent. Income tax and the allocation to pension and insurance funds are appropriations. The income tax authorities have decided that the business must be regarded as a new rather than a continuing one and, consequently, the liability to income tax is higher than it might otherwise have been, at £572,403. Other taxes and rates account for £394,997 and, with import duties, our total contribution is well over £1,000,000—in other words, one-ninth of our revenue goes to the State. Solid fuel cost another £1,055,247; petrol and oil, £448,882; salaries and wages, £4,049,550.

The amalgamation of the balance sheets of the dissolved companies necessitated numerous adjustments from which emerged a valuation for fixed assets of £11,408,677 and a goodwill figure of £969,209. When the railway rolling stock is replaced it may not be considered reasonable to charge against revenue the then obsolescence in this figure, in which event it will have to be added to the figure for goodwill. The same will apply to the item railway lines, amounting to £6,500,000. If and when lines are closed the obsolescence in this figure may also have to be charged to goodwill.

It will be noted that comparative figures are not shown as they will be in the future, the reason being that the accounts are made up to the end of the first accounting period. However, I have had comparisons made with 1939 of the two most important items of expenditure, and they show that the wage increase now over 1939 amounts to £982,858. Coal in 1939 only cost £388,691 and less of it was consumed to run 12,000,000 miles than was consumed to run 8,000,000 miles last year, an increase in cost of £666,556 or just over 300 per cent.

As required by the 1944 Act, the question of the payment of wayleaves to the Dublin Corporation by the Dublin United

Transport Company was submitted to arbitration and we have paid £169,500 to wipe out the annual payment of £15,797.

Wartime Operating Difficulties

The emergency found the Great Southern Company with low stocks of materials, worn-out engines, and carriages and wagons which were obsolete before the 1930's. The various railway staffs were working under bad conditions, and before anything else could be done these conditions had to be improved. The coal was so appallingly bad that no train would run for more than thirty miles without having the box cleaned out and the fire re-lit, and you can realise the suffering of the train crews under such conditions. Everything to keep the wheels turning was tried. Assistance from outside our own organisation was sought and willingly given, and I want particularly to mention the Electricity Supply Board, to which we owe a debt of gratitude for having loaned us one of its fuel experts at a time when things were very bad for all of us. We ultimately found that we could not improve on the briquetted fuel as a substitute for coal, and we had fortunately procured plants and a large supply of pitch just in time. The raw material remained of bad quality all through, but we were often so low in supplies that notices announcing a suspension of services were ready for publication.

Tyres were a constant source of worry, and the shortage of spare parts became such a problem that some ninety buses had to be broken up to keep the others in service; and the tram services were suspended for want of electricity in 1944. Had, however, the policy of the Transport Company in 1936 favoured trams rather than buses, Dublin City would have been without passenger transport from 1942 onwards for want of materials, apart altogether from electricity supply. Goods vehicles were old and unsuitable and road freight services were much more difficult to operate, and in the circumstances we provided a good road service with very poor equipment.

I have said I promised a plan, and although we worked night and day to prevent a transport breakdown during the emergency, we always had an eye on the future. I can now tell you of the plans we have formulated. It is proposed to co-ordinate rail and road services and for this we will build large maintenance depots. Stations will be important centres in cities, and in towns proper accommodation will be provided for passengers, but several stations and many branch lines will be closed down for regular services although some will remain open for special services. All trains will be fast moving, but long-distance road services will of necessity be slow. Merchandise will be carried from door to door at an inclusive transport rate, the goods suited to rail going for most of the journey by rail.

Diesel-Electric Proposals

Passenger trains will be fast and comfortable and will be used mainly by long-distance travellers. All will probably be powered by diesel-electrics. I say probably, because we have to satisfy ourselves that this form of traction is the most suitable for our needs. Early last year we

ordered five diesel-electric shunting locos; subsequently we ordered two diesel-electric locos for freight trains and one passenger train—all from a British manufacturer. We have on order also from a Swiss firm two diesel-electric freight locos. It will take two years to supply them, but we will have started to experiment under service conditions with diesel-electrics by this time next year, provided always that our suppliers are able to fulfil the contracts we have made with them. These will be prototypes, and the diesel engines and electrical equipment for them will be imported, but the chassis or underframes will be built and the locos assembled at Inchicore. If the experiment is successful the complete locos will be manufactured in this country and modern engineering shops will replace those in which steam engines are built and maintained at present. The workshop plans are being considered.

It is proposed to manufacture new rail goods wagons at Limerick and land for the purpose has been acquired. We have also, in association with Imperial Chemical Industries Limited, designed an experimental wagon to be made partly from aluminium alloys and partly from ordinary aluminium. Ten of these wagons will go into service during this year. They will be more costly than the wooden ones in use for many years, but they will be much lighter in weight and will cost less to maintain.

New Works

The railroad must be modernised, and already work has begun on portions of the line, converting what has been single track into double track. We shall install automatic signalling and provide proper goods stores, which are an essential part of any scheme to co-ordinate road and rail services. At present our goods stores are congested and thoroughly inefficient and, with a view to improving them at once, we have acquired from the London Midland & Scottish Railway Company all its land, buildings, permanent way, and sidings at the North Wall. We are leasing to that company premises for its own requirements as a shipping company.

We are acquiring land to extend the goods stores at Limerick and we have planned extensions for Cork. We have undertaken to build a new concrete wharf at Waterford to replace the present wooden one—extending it out into the river so that large ships which have for years been unloading on the opposite side of the river can unload on to the railroad. Loading banks for cattle will be overhauled and improved, and work has commenced on cattle lairages at Caba.

We fear we are not ready to cater for the holiday-makers who are expected to visit the country this year, but we will do everything we can to make our visitors comfortable.

Plans for the new hotel at Glengarriff have been prepared and work will commence within the next three months. All our other hotels will be overhauled and brought right up to date.

We have on order a hundred bus chassis. Some of them have been delivered and are at this moment being assembled. There is great difficulty in procuring materials for the bodies; we have had to go to America to get moquette. Nevertheless, new vehicles will come into service during this month and, provided we are not held up for body materials they will continue to come into service at regular intervals. A large consignment of spare parts has arrived, which will enable us

to put back into daily service many of the buses taken off and broken up for spare parts. We bought during the year some 250 second-hand lorries and have overhauled and rebodied a large number of others. These are not ideal vehicles and the whole road fleet is pretty well worn out, but our shopmen are now working on the bodies for 200 new freight vehicles for which the chassis have been purchased. They are the large type with trailer, they will be assembled here, and they should all be on the road by this time next year.

The company proposes to build completely all its road chassis. The first step is to assemble them, and the vehicles to go into service during the next year or so will be assembled in Dublin, and premises have been prepared for this work at Broadstone. Plans have been drawn for a new workshop in which the complete chassis will be manufactured.

Reduced Rates and Fares

The profits earned during last year are no criterion for the future. The railway company in 1941 paid dividends out of a rates refund; the next year no dividend was paid, and during the next year freight charges and fares were increased, mainly, it is true, by raising the far too low exceptional rates, and dividends were again paid. It is proposed to pay a dividend now, and we would like to do so every year, but in the present state of things one cannot make promises as it is not possible to stabilise the gross revenue. We could stabilise the revenue—and what is more important, control expenditure—if we had the premises, plant and equipment about which I have told you, but in the meantime will the community continue to pay high transport charges for the kind of service we are now rendering and must continue to render until our organisation is more perfect? I do not think they will and, in addition, we will be faced with competition from the independent operator who may carry what goods he chooses while we must take what offers, the low-rated traffics which are carried at a loss as well as the high-rated traffics for which we will have to compete. We must face facts and, after giving the matter careful consideration the board has decided to reduce rates and fares.

It has been decided to reduce bus fares in Dublin and bring Cork and other cities into line. It is not proposed to reduce long-distance bus fares, but adjustments will be made so as to enable people in the country to travel short distances at reduced rates. We propose to reduce passenger rail fares. In October last we resumed the issue of return rail tickets, which was in effect a reduction of fares, and it may be that we will again discontinue the issue of return tickets, but this time it will be for easy accounting only and will not affect the general reduction.

With regard to the transport of merchandise and goods, there are at present on the railway nine classifications, and it is proposed to eliminate them and introduce six new classifications instead. This will further simplify our method of charging for this kind of transport and effect a substantial reduction in rates, as the three high-rated classes will disappear.

Altogether these reductions in rates and fares—to take effect as from July 1 next—represent a cut in the gross revenue of something over three-quarters of a million pounds in a full year and very substantial economies will be necessary if we are to close the gap which these adjustments will cause in our income. Nevertheless, the

directors feel it is in the best interests of the company, as well as in the public interest, to anticipate these economies but they realise they are taking something of a risk in making these considerable reductions this year.

During the year Mr. H. B. Pollock, a former director of the Great Southern Railways Company, and Mr. J. F. Costello, were co-opted to the board to fill the vacancies caused by the resignation of the Rt. Hon. James MacMahon, P.C., and Major H. A. Henry, and I am sure you will want it conveyed to those two gentlemen that we—stockholders and directors alike—recognise and appreciate the faith-

ful and consistent service rendered by them to the transport industry for many years. For myself I say of them both that no man could hope for, better colleagues.

In conclusion, may I on your behalf and on behalf of the board thank the officials and every employee in the service of the company, not only for their loyalty during the year, but also for the exceptional and willing service they rendered—often under appalling conditions—during the emergency.

I now formally move the adoption of the directors' report and accounts, and ask the Vice-Chairman to second it.

The report and accounts were adopted.

Midland Railway Co. of Western Australia Ltd.

The annual general meeting of the Midland Railway Co. of Western Australia Ltd. was held at Winchester House, London, E.C.4, on March 20, Mr. Robert W. Adeane, O.B.E., Chairman of the company, presiding.

The notice convening the meeting was read by the Secretary, Mr. John S. Lewis.

The Chairman, in moving the adoption of the report and accounts, said that before proceeding with the ordinary business he was sure the meeting would wish to join him in expressing regret at the resignation on his doctor's advice of Mr. Sandford Poole, both from the Chair and as a member of the board. Mr. Poole had been a member of the board for 28 years, and its Chairman for 10 years. In spite of increasing difficulties, he saw their company through the difficult war years, and he was sure they all wished him improved health and well-earned rest in his retirement.

During the year under review, the cessation of defence traffic and the conveyance of a higher proportion of low-rated traffic had caused a fall of nearly £114,000 in gross earnings, against which operating expenses had fallen by only £24,000. The reason for this was that, in spite of a considerable decrease in train-miles run, the cost of everything had gone up in Australia, as it had in every part of the world. The operating ratio was 60 per cent., as compared with 48 per cent. last year. There were many British railways abroad which would be very glad to have such a good ratio. He considered it reflected credit on the management in Australia, and proved that their line was still a valuable property.

The fact that their net profit in London was so disappointing must, in his opinion, be greatly attributed to loss on exchange, and to the volume of traffic, which had always been small, and which this year was affected by a special factor. This factor was an unprecedented and disastrous flood during the month of June, 1945. Track was washed away in 50 places, and all public traffic was suspended from June 18 to 29. Temporary repairs were quickly effected, but in spite of this, traffic was, to some extent, dislocated and restricted speeds had to be maintained for several weeks.

The main item of capital expenditure was the provision of a new locomotive water supply at key points on the line, costing £3,900. The total expenditure under the heading amounted to £6,773. The main item of revenue renewal expenditure was the relaying of 10 miles of track with new 60-lb. rails. The total renewals expenditure, amounting to £73,370, was spread over maintenance of rails, sleepers, locomotives, cars and wagons.

After paying interest for the year on the 4½ per cent. first mortgage debenture stock,

only £6,175 remained to meet interest on the second mortgage cumulative income debenture stock. He had no doubt that, after the 4 per cent. dividend on the ordinary stock paid in May, 1945, in respect of the year ending June 30, 1944, and the interim payment of 2 per cent. on the income debenture stock, which was declared in May last, the fact that they made no further payment on the income debenture stock, which was payable out of the profits for the year, must have caused stockholders not only disappointment, but surprise.

At the time that the decision to make an interim payment was made, the board had to base its decision on the nine months' working to March 31, 1945, and on an estimate for the remaining three months to the end of the financial year. Estimates for these three months were proved wrong by the disastrous floods to which he had already referred.

Indications for the current year were based on seven months' operations to January 31, 1946, and these indicated results even less favourable than last year. Provided, however, that there was no repetition of the floods, they might pick up some of their revenue decreases during the year in June.

It was rather with a view to the distant future that the Chairman felt it his duty to review their position. On the credit side, they had a line running through a productive district, embracing much good sheep land; their line traversed a district which was capable and which, he had no doubt, would increase its population and its production year by year. The homecoming soldiers would accelerate this tendency. They had land for colonists, and the railway would help settlers in every way it could.

On the debit side, their system had, and they were proud of the fact, suffered much wear and tear from the heavy traffic of the war years, and a considerable relaying programme had to be faced. In order to help the development of the district which they served, and to meet road competition, they needed faster services, and diesel cars for passengers. This would involve a very large sum, and they were faced with the further fact that they did not know what their gauge would be in 10 years time. Australia had wisely decided to standardise to 4 ft. 8½ in. the gauges of all its railways. This great work would take many years to accomplish, and in the meantime this uncertainty of gauge placed them in a position of some difficulty. The Chairman hoped, during the course of the year, to visit their property, and to consult with their Local Director and Manager this and the many other serious problems confronting them.

The report and accounts were adopted.

Mansion House Association on Transport

The annual luncheon of the Mansion House Association on Transport was held at the Connaught Rooms, London, W.C.2, on March 20. Mr. W. H. Gaunt, C.B.E., President of the Association, was in the chair.

The President, in welcoming the guests, regretted that the Minister of Transport, Mr. Alfred Barnes, was unable to be present through indisposition, but his place had been taken by the Parliamentary Secretary, Ministry of Transport, Mr. G. R. Strauss. He thought this country had the best transport facilities in the world, and he assured his hearers that in the matter of nationalisation, the Association was very jealous of anything that might blunt that instrument of service to the public in any direction. Members of the Association had been active on commissions dealing with transport or as witnesses in giving evidence to such bodies, and in giving assistance to ministries. It was not for him to say anything about coming shadows, and they were prepared to look on nationalisation in the broadest way. They would judge any proposals put before them on the basis of whether they were likely to help them in their work of seeing that the nation was well fed, well clothed, and well supplied. As transport directors and managers of large firms, they were ready to help the Government, and would keep their advice to a matter they knew something about, namely, the transport pool.

Mr. G. R. Strauss (Parliamentary Secretary, Ministry of Transport) expressed the regret of the Minister at being unable to attend, and conveyed the Minister's thanks to the Association for the services it had rendered to the Ministry and to the cause of transport, and would render to the nation in the future. The Government was now busily engaged in working out details of a transport scheme that would appear to be of the greatest benefit to the public and the traders of this country. The criterion must be whether their proposals would meet the needs of the public in passenger transport, and of commerce in goods transport. He hoped the scheme would be viewed impartially, and it would be agreed that something had to be done.

At this point there were exclamations of "why?" from the audience, and Mr. Strauss recalled that there had been demands from the transport industry itself for better co-ordination.

Continuing, Mr. Strauss said they would welcome advice and suggestions from those who were engaged in the transport business or who bought transport. The Minister had asked him to express his appreciation of the services the Mansion House Association had rendered in making known the needs and views of the transport user; whatever transport organisation there might be in the future, the value of the Association in this respect would be equally great. It was appropriate to pay tribute to all those outside the Ministry, in industry and the carrying trades, who had played their part so well and rendered it possible during the war, not only to carry all the equipment necessary for our Forces, but to distribute the essentials of life throughout the war.

It was the intention of the Government to remove all unnecessary restrictions as quickly as possible. It looked forward to seeing again some of the normal commodities of life distributed and on sale in the shops. At the present time the

inland transport system of the country was capable of accepting all the traffic offered. The real test would come later, when the production drive got under way, and unless the system was brought up to date there might be difficulties in transporting commodities from the factories to the shops and to the ports. They would have to provide transport for many more people than before the war, enabling them to travel to work by train and bus without undue strain, and also adequate transport facilities to enable our people at last to enjoy proper holidays.

For six years transport had been obliged to follow a policy of mend and make do. At one time about one railway wagon out of every eight was under repair. The Government had put in hand a programme of building 50,000 16-ton steel wagons, and these would be in addition to the railway companies' own building programme. More passenger equipment would have to be built, and running tracks relaid, but this would take time because a large part of our effort was to be devoted to our export trade. However, plans were being laid on the basis that the services of the future must not only be as good as in the past, but very much better.

In the post-war years they were determined to achieve a higher standard of living than we had before. In that high endeavour their major concern must be to see that, under the leadership of the Government and with the help of industry, we maximised our productivity. We must ensure that Britain was not only able to make it, but could carry it as well.

Sir Patrick J. H. Hannon, M.P. (President, National Union of Manufacturers), said he believed the policy of His Majesty's Government in rushing headlong into nationalisation amounted to something like a political crime. He hoped the Government would show more sense in dealing with the transport problem than it had in its experimental legislation of the past six months.

Mr. D. McA. Eccles, M.P. (Mansion House Association Parliamentary Committee), said the Minister should not throw bouquets to transport for its work when un-nationalised, and then say he wanted to take it over. Civil servants were over-worked already, and the Government should welcome an industry that could keep its own house in order.

Among the guests at the luncheon were the following:—

Mr. J. Abady (Acting Registrar, Railway Rates Tribunal), Lord Ashfield (Chairman, London Passenger Transport Board), Messrs. V. M. Barrington Ward (Divisional General Manager, Southern Area, L.N.E.R.), G. Cole Deacon (Secretary, Railway Companies' Association), A. G. Croxall (L.N.E.R.), H. T. Duffield (Road Haulage Association), F. S. Eastwood (Regional Transport Commissioner), A. Henderson (Regional Transport Commissioner), Sir Reginald Hill, K.B.E., C.B. (Deputy Secretary, Inland Transport, Ministry of Transport), Sir Cyril Hurcomb, G.C.B., K.B.E. (Secretary, Ministry of Transport), Messrs. D. R. Lamb (Deputy Director of Transport, Ministry of Food), W. E. Macve (Regional Transport Commissioner), A. G. Marsden (Director, Food Transport, Ministry of Food), E. G. Marsden (Secretary, Railway Executive Committee), Sir Ronald Matthews (Chairman, L.N.E.R.), Messrs. G. I. Morris (Private Secretary, Ministry of Transport), E. Gleeson Robinson, C.B. (Regional Transport Commissioner), T. W. Royle (Vice-President, L.M.S.R.), A. E. Sewell (Road & Rail Conference), R. W. Sewill (Road Haulage Association), J. E. T. Stanbra (Secretary, Railway

Clearing House), G. F. Stedman (Ministry of Transport), J. H. Stirk (Regional Transport Commissioner), Sir Wm. Bruce Thomas, K.C. (President, Railway Rates Tribunal), Messrs. F. Gordon Tucker (Regional Transport Commissioner), Alex. J. Webb (Superintendent (Outdoor), Railways, London Passenger Transport Board).

British Railways Transportation Club

Canadian Presentation to Colonel Speir

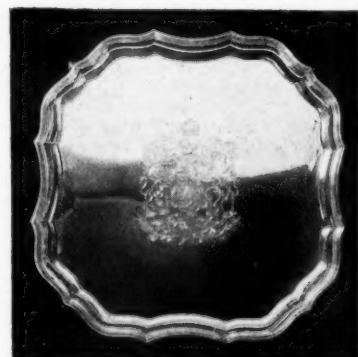
A presentation in the form of a silver salver with the arms of Canada engraved in the centre and an inscription on the back was made recently to Colonel Speir, the Secretary of the Transportation Club, on behalf of the Officers of the Canadian Movement Control. It will be remembered that the British Railways Transportation Club was opened in January, 1943, at 44, Wilton Crescent, London, S.W., to afford hospitality during the war to American and Canadian officers temporarily in this country, who, in peacetime, were employed by transport companies.

The inscription on the salver is as follows:

Presented to
Lieut.-Col. K. R. N. Speir
by the
Canadian Military Headquarters Members
of the
Transportation Club
In appreciation of his many kindnesses
Feb. 1st, 1946

The presentation was made by Colonel Simmons on behalf of Brigadier N. B. MacDonald, C.B.E., who was absent on the Continent, and Colonel J. Wallis, O.B.E., who was absent through indisposition, and the following letter was handed to Colonel Speir on behalf of Brigadier MacDonald:—

"I was asked by the Committee which has made the arrangements, if I would be



kind enough to make this presentation to you, and it is a matter of great regret to me that the much discussed English weather, by delaying my departure to the Continent, prevents me from being able to make the presentation.

"I feel, however, that I must say how greatly myself personally, and all other Canadian members of the Transportation Club, have appreciated the facilities which it has offered us, and we fully appreciate the long hours and hard work put in by you, which have made this Club to us much more than a Club and practically a home from home.

"Although we are all naturally anxious to get home, the new lease of life which the Club has recently taken on will make our enforced stay here considerably more pleasant and easy to bear than it would have been if the Club had finally closed.

"Again thanking you all for your consideration and work."

Institution of Railway Signal Engineers' Annual Meeting

The annual general meeting of the Institution of Railway Signal Engineers was held in London on March 18. The retiring President, Major R. Falshaw Morkill, occupied the chair during the formal business proceedings. He referred to various points in the annual report and statement of accounts, particularly the work of the various committees, and the financial position of the Institution, and moved their adoption. Mr. F. L. Castle seconded the proposal, which was carried, after which the composition of the new Council, as given by the result of the ballot, was announced, as follows:—President, Mr. H. H. Dyer; Vice-Presidents, Mr. F. L. Castle and Mr. A. Moss; Messrs. T. Austin, E. G. Brentnall, W. H. Challis, R. Dell, J. H. Fraser, T. Guest, F. Horler, P. Lomas, C. F. D. Venning, S. Williams (Members); Messrs. W. J. Claridge, W. J. Howes, F. Mann, N. Marshall, A. L. Mills, R. A. Powell (Associate Members). The re-election of the auditors, Gundry Cole & Company, was agreed to.

Mr. T. Austin said he felt it to be a matter for considerable regret that the members should not have taken advantage of the enlarged rights of voting inaugurated on this occasion and of electing the persons who were to direct the affairs of the Institution. Ten years ago he had first raised the question of associate members taking an active part in those affairs. His proposals had been quite spontaneous, and he thought it would strengthen the Institution if such a course were taken. He felt much disappointed that they had not shown an adequate interest on this occasion. Those present were evidently from the stalwarts who did take a serious interest in such questions. He hoped they and others who could do so would bring this important point home to the non-voters.

Major Morkill then vacated the chair, which was assumed by the newly-elected President, Mr. H. H. Dyer, who expressed his thanks for the honour done him and his anxiety to do justice to the tasks entrusted to him. He invited Mr. A. Moss, Vice-President, to propose a vote of thanks to Major Morkill.

Mr. A. Moss said that Major Morkill had been associated with them for a long time. He had conducted their meetings with much tact and discretion and had presided over the Council meetings in like manner. He had occupied the chair during two sessions and had served under two reigns, as it were, having seen the change from the rule of the old to that of the new Articles of Association.

Mr. C. G. Derbyshire, seconding, spoke as one of the associate members who had been privileged to serve on the Council and had thus seen from the inside the details of the work Major Morkill had done for them all and learned to appreciate how much he had had the interest of the Institution at heart, particularly the welfare of the associate members, and students, to whom he had given much encouragement. The vote was carried with acclamation.

Mr. H. H. Dyer then delivered his presidential address, an abstract of which appears on another page. At its conclusion, Mr. E. G. Brentnall moved a vote of thanks to Mr. Dyer. He said that the address showed a wide knowledge of, and outlook on, the detailed work of the

signal engineer, as well as its author's interest in the Institution. It was a very good augury for Mr. Dyer's year of office.

Mr. W. J. Howes seconded the resolution, which was carried with acclamation.

The President, acknowledging the vote, announced the next meeting, for April 17, with a paper by Mr. R. S. Griffiths, Past-President, on "Upper Quadrant Signals." Members also were invited to attend a meeting of the London Section of the Permanent Way Institution on April 10, when Mr. F. H. D. Page, Signal & Telegraph Engineer, Great Western Railway, would open a discussion on points of contact between the work of signal and permanent way engineers. The President also announced that the Honorary Secretary, Mr. L. F. Baker, would relinquish that office on March 31. An announcement would shortly be made concerning his successor. Their grateful thanks were due to Mr. Baker for all he had done through very difficult years, since succeeding Mr. M. G. Tweedie. Members expressed their concurrence in this by acclamation which Mr. L. F. Baker acknowledged.

Institute of Transport First Post-War Dinner

The first post-war dinner of the Institute of Transport was held at the Connaught Rooms, London, on Wednesday of last week (March 20) when the chair was occupied by the President, Sir Frederick Handley Page. There was an attendance of 300 including a number of distinguished visitors. The Minister of War Transport, Mr. Alfred Barnes, was indisposed, and unable to attend, but he was represented by Mr. G. F. Strauss, Parliamentary Secretary to the Ministry of Transport. Mr. Ivor Thomas, Parliamentary Secretary to the Ministry of Civil Aviation, was another principal guest.

The experiment was tried, with considerable success, of avoiding a toast list and the resultant speeches, leaving the function entirely as a social evening. Apart from the Loyal Toast, the only toast offered was that of "The Guests," which the President presented in a typically light-hearted and humorous way. Both Mr. Strauss and Mr. Thomas replied in similar vein.

The evening was devoted to a programme of music and to opportunities for members and their guests to circulate and renew contacts; in many cases, the occasion provided opportunity for meetings that had been interrupted for the whole or a substantial portion of the war years.

Among those present were:—

Messrs. H. H. Andrews, A. W. Arthurlton, R. I. D. Arthurlton.

Messrs. A. L. Bagley, S. Baker, M. F. Barnard, C. B. Barratt, C. Barrington (Member of Council), C. D. Bartlett, O. G. Baylis, E. W. Bayliss, J. E. Beckett, R. A. Beckett, F. W. W. Beebe, Squadron-Leader R. L. Bingham, Messrs. W. H. Binns, F. T. Birch and guests, N. N. Bird, A. S. Bishop, G. Bles, F. A. Boyce, W. Bramham, J. W. S. Brancker, J. Brennan, Lt.-Colonel P. Brooke-Hitching, Messrs. F. W. Buckman, J. Burman, Lt.-Colonel F. Bustard.

Messrs. E. L. Cadwallader, S. O. Carter, F. L. Castle, A. L. Castleman, William C. Chandler, Major F. J. Chapple (Member of Council), Messrs. W. Chatfield, A. S. C. Chattey, C. N. Christensen, W. W. Clark, H. M. Clarke, W. R. Clemens, R. M. Cole,

H. C. Crane, Major-General J. S. Crawford, Messrs. F. W. Crews (Secretary of the Institute), P. Croom-Johnson, B. C. H. Cross, H. H. Crow, J. O. Cumming, Major P. Cunliffe, Dr. Brysson Cunningham.

Messrs. R. Davidson, R. G. Davidson, E. Dawson, J. Deakin, H. C. Drayton, S. Dudman, A. A. M. Durrant, F. H. Dutson.

Major F. S. Eastwood, Messrs. M. Escombe, J. T. Evans, W. J. Everard.

Messrs. E. Falconer, V. H. Fenney, H. J. Ferguson, J. Finlay, C. Fountain, J. R. Fox.

Messrs. Sidney E. Garcke (Past-President), W. H. Gaunt, S. R. Geary (a Vice-President),

W. Gildon, L. Godfrey, F. Grainger, W. H. Gray, L. W. Gupwell (a Vice-President), Sydney S. Guy.

Messrs. C. S. R. Hall, A. E. Hammett,

M. W. Harris and guest, P. J. Hays, C. F. Haywood, S. D. Heal, A. Henderson, A.

Hoffman, H. Hoffman, T. Graham Homer, B. Homfray-Davies, L. J. H. Horner, A.

Howell.

Mr. J. Ironmonger.

Messrs. R. Kelso (Past-President), H. Norman Kerr, C. F. King, C. F. Klapper, S. F.

Kneller, H. Knight.

Messrs. F. G. Laird, D. R. Lamb, Charles

E. Lee, J. M. Leighton-Bailey (Member of Council), W. H. Lessiter, W. J. Lessiter, H.

Norman Letts.

Messrs. C. E. MacEwen, A. G. Mack,

W. E. C. Macve, Brigadier-General Sir H. Osborne Mance (a Vice-President), Messrs.

R. B. McDonald, J. McGrath, M. V. B. McGrath, E. Reid McNab, F. A. A. Menzler,

Major F. C. G. Mills, Messrs. J. W. Mitchell,

R. J. Munday, B. Murphy, Sir Arnold A.

Musto.

Messrs. L. H. K. Neil (Member of

Council), S. W. Nelson, Sir Hazleton R.

Nicholl (Member of Council), Mr. J. S.

Nicholl (Past-President), Major F. Noble.

Mr. H. Olding.

Sir Frederick Handley Page (President),

Messrs. T. L. Paterson, A. J. Pearson, P.

Pearson, G. A. Perry, W. G. Pierce, R.

Stuart Pilcher, R. G. Pittard, H. Prewett,

A. T. Priddle, J. W. Punter, J. F. E. Pye,

W. H. J. Pyne.

Mr. K. W. Ratledge, Lt.-Colonel A. W.

Reed, Messrs. F. J. Reynolds, T. G. Richardson,

Carlton F. Roberts, V. A. M. Robertson,

T. Robson, D. Rockman, J. C. Rockman,

H. Rossington, E. W. Rostern, F. G. Royal-

Dawson, T. W. Royle (a Vice-President),

Colonel H. Rudgard.

Messrs. F. Scopes, C. J. Selway (Honorary

Treasurer), H. Shankland, W. J. Shea, W. A.

Shepherd, L. H. Short, E. C. Simon, G. F.

Sinclair, W. A. C. Snook, D. G. Sofio, H. G.

Sorrell, J. H. Stirk, H. E. Stokes, G. R.

Strauss, M.P. (Parliamentary Secretary,

Ministry of Transport), O. G. Sunderland,

Gilbert S. Szlumper (Past-President).

Messrs. J. P. Taylor, J. W. Taylor, Cap-

tain C. Thomas, R.N., Messrs. Ivor Thomas,

M.P. (Parliamentary Secretary, Ministry of

Civil Aviation), Sir Theodore E. Thomas

(Past-President), Messrs. H. C. Tree, A.

Twidle.

Messrs. A. B. B. Valentine (Member of

Council), W. T. Venton.

Messrs. B. E. Walls, T. Walton, A. Watson

(Member of Council), J. S. Weatherby, A. E.

Wells and guests, E. G. Whitaker, Mr.

Williams, Messrs. W. Cyril Williams, W.

Williamson, J. O. Willis, J. S. Wills (Member

of Council), J. O. Wood, Sir William V.

Wood (Past-President).

ROAD ACCIDENTS IN JANUARY, 1946.—

The return issued by the Ministry of War

Transport of the number of persons re-

ported to have died, or to have been

injured, as a result of road accidents in

Great Britain during the month of Janu-

ary last, shows 416 deaths (compared

with 335 in January, 1945), 2,475 seriously

injured (compared with 2,003 in

January, 1945), and 7,977 slightly injured

(compared with 6,525 in January, 1945).

With the exception of January, 1945, the

total of 416 deaths is the lowest recorded

in this month for many years.

Coal Owners' Tribute to L.N.E.R.

The Chairman of the Northumberland Coal Owners' Association, Mr. Richard J. Weeks, has written to Sir Ronald Matthews, Chairman of the L.N.E.R., as follows:—

"At the annual meeting of the Northumberland Coal Owners' Association it was unanimously resolved that I should convey to you the very high appreciation of the Northumberland Coal Owners for the way in which the L.N.E.R. has carried out the regular clearance of coal from, and delivery of stores to, our pits, and generally has handled our traffic during these last six years. During this period of great stress, trial and restriction, shortage of labour, shortage of wagons and materials, coupled with blackout difficulties and the very numerous enemy attacks by air, the efficient organisation and management of the railway company, which never failed, has earned and deserves our highest praise.

"A very great and exceptional strain was imposed on the railway company due to enemy action at sea, resulting in a very large increase of their long-distance coal traffic, yet at no time did our collieries suffer material loss of production of coal from such changes. We feel we should like to place our gratitude on record and ask if you would be good enough to convey our thanks to your directors, staff, and all your workmen, especially those in our own district, who so conscientiously and steadfastly did their part in these difficult years."

Parliamentary Notes

Great Western Railway Bill

The Great Western Railway Bill was read a second time in the House of Commons on March 20.

Ministry of War Transport

Mr. G. R. Strauss (Parliamentary Secretary to the Ministry of War Transport) in the House of Commons on March 19 moved "That an humble Address be presented to His Majesty praying that the Ministry of War Transport (Dissolution) Order, 1946, be made in the form of the draft laid before Parliament." He said that the Draft Order also carried out the intention of the Ministers of the Crown (Transfer of Functions) Act in that it dissolved the Ministry of War Transport and transferred all its functions to the Minister of Transport. It must not be considered that the new Ministry of Transport would have powers identical with those possessed by the Ministry of Transport before the war. It had certain additional powers, and particularly the responsibility for the Mercantile Marine, which had been, at that time, the responsibility of the Board of Trade, and, during the war, had been the responsibility, first, of the Ministry of Shipping, and then of the Ministry of War Transport. Those functions would now be added to those possessed before the war by the Minister of Transport, but there would be no additional charge on public funds created by the Order. The change of name merely reflected the fact that the Ministry in future would be devoted to purposes of peace, and no longer those of war.

Mr. J. S. Maclay (Montrose Burghs—Lib. Nat.) said it was a matter of very serious concern that the present Minister of War Transport was not a Member of the Cabinet. As an individual, he was

sure that the Minister merited a place in it, and he was certain that the importance of the Ministry was such that the Minister should be a Member of the Cabinet. He urged the Prime Minister to give the matter the most serious consideration.

The motion was agreed to.

A similar motion was moved in the House of Lords on March 19 by Lord Winster and agreed to.

Questions in Parliament

Seat Reservations on Trains

Mr. E. G. Willis (Edinburgh North—Lab.) on March 11 asked the Minister of War Transport when he expected it would be possible to re-introduce the facilities for booking seats for long-distance rail journeys.

Mr. Alfred Barnes: I am anxious to restore this facility as soon as conditions permit.

Mr. T. Steele (Lanark—Lab.): Would the Minister bear in mind the number of people who will be travelling during the summer, and, if he cannot re-introduce the booking of seats, will he take steps to ensure some regulation of the passengers during the holiday months, so that it will be convenient for the passengers and they will not have to queue up at the stations overnight?

Mr. Barnes: The problem of holiday traffic is already being considered. One has to take into consideration the fact that people must be taken to where they want to go, and procedure which might facilitate that must be carefully examined.

Lt-Commander Gurney Braithwaite (Holderness—C.): While it may be impossible to re-introduce the booking system in general, could not the Minister introduce some temporary measures to deal with such periods as Easter and Whitsun?

Mr. Barnes: I will certainly take note of what has been said, and I will represent it to the railway companies, but this problem of getting the people to where they want to go is exceedingly difficult, and every restriction introduced tends to add to the problem rather than remove it.

Sir Ronald Ross (Londonderry—C.): Will the Minister bear in mind that the principle of getting all the holiday makers to where they want to go applies to all parts of the United Kingdom?

Mr. Steele: Is the Minister aware that there has been in operation at Blackpool for many years a system whereby the people can ensure seats in trains by arrangement with the railway company, and will he consider what has happened there so that he can make suggestions on similar lines to the railway companies?

There was no reply to these questions.

Cheap Railway Fares

Mr. Henderson Stewart (East Fife—Lib. Nat.) on March 7 asked the Minister of War Transport if he was aware of the inconvenience caused to passengers by the fact that the longest-period return ticket now offered by the railway companies was a monthly return; and when the companies proposed to re-institute the three-monthly return ticket, which had been available before the war.

Mr. Alfred Barnes (Minister of War Transport) in a written answer stated: Passengers desiring to postpone their return for longer than one month may purchase ordinary return tickets available for three months. The issue of cheap return tickets available for more than one month at less than the cost of two single fares was suspended during the war, in

common with other cheap fare facilities. As I stated in reply to a Question by Mr. Ernest Davies (Enfield—Lab.) on January 28, I propose to review the whole question of cheap fare facilities at Easter-time.

Northern Ireland Travel Restrictions

Dr. James Little (Down—C.) on March 7 asked the Secretary of State for the Home Department whether he would now take steps to ensure that the remaining restrictions on travel between Great Britain and Northern Ireland were entirely removed; and the freedom of travel restored between Northern Ireland and other parts of the United Kingdom.

Mr. Chuter Ede (Secretary of State for the Home Department): The sooner restrictions of this kind can be relaxed or abandoned the better pleased we all shall be, but as Dr. Little knows, there are still reasons for the modified form of control now in operation.

Dr. Little: Can the Minister give an approximate date when these tiresome regulations will come to an end, as that would be cheering news to the public?

Mr. Ede: I hesitate to prophesy.

Belfast-Prestwick Air Service

Mr. Emrys Hughes (South Ayrshire—Lab.) on March 13 asked the Parliamentary Secretary to the Ministry of Civil Aviation if he was aware that the air service between Belfast and Prestwick was now operating twice daily and carrying 450 passengers a week; that an additional allocation of petrol would enable it to operate five times daily and reduce fares below third class fares by rail and boat between Glasgow and Belfast; and if he would consider a further allocation of petrol for this purpose.

Mr. Ivor Thomas: I am aware of the present operating capacity of this air service. I am unable to support an application for an increased allocation of petrol, but arrangements are being made to augment the direct Glasgow-Belfast air service.

Clerical Workers and Cheap Fares

Mr. David Eccles (Chippenham—C.) on March 18 asked the Minister of War Transport whether he would make arrangements to extend to clerical workers the special facilities for cheap railway tickets which were at present issued only to manual workers on the production of a certificate from the employer.

Mr. Alfred Barnes: No, Sir. Workmen's tickets were originally intended only for artisans, mechanics and labourers who travelled in the early morning hours, and, although the former qualification is not usually enforced during the normal early morning hours of issue, it is an essential feature of any practicable arrangement for issue outside those hours.

Mr. Eccles: In view of the Prime Minister's appeal to clerical workers, does not the Minister think that it is unfair that on certain trains on which both manual workers and clerical workers travel, one should enjoy a cheap ticket and the other should not?

Mr. Barnes: While I appreciate the difficulties of certain inequalities, on the other hand an extension of these matters very often involves further difficulties than the difficulties which it is attempted to remedy.

Mr. George Wallace (Chislehurst—Lab.): Is not the Minister aware that, bluntly, these requests are due to the fact that clerical workers are grossly underpaid as compared with other workers?

There was no reply.

Notes and News

Civil Engineering Assistants Required.

—Senior and junior civil engineering assistants are required by a main-line railway company. See Official Notices on page 367.

South African Railway Earnings.

—Railway earnings in South Africa for the period February 10 to March 9 amounted to £4,249,905 compared with £4,228,387 in the previous corresponding period.

Royal Train Journeys on L.M.S.R.

—During 1945 the King and Queen made 19 journeys in the Royal train over the L.M.S.R. system, covering 4,563 miles, and bringing the total since the beginning of the war to 151 journeys, involving 35,690 miles.

Works Manager Required.—A works manager is required for a large locomotive building and general engineering works in India. Applicants must be fully qualified engineers, having held senior executive positions in large works. For full particulars see Official Notices on page 367.

G.W.R. Re-Opens Football Ground

Halt.—Ninian Park Platform, adjacent to Cardiff City F.C. ground, is to be reopened by the G.W.R. Trains from the Rhondda and Rhymney Valleys and from Barry will stop at the platform before and after matches as before the war.

Accident at Mottingham, Southern Railway.

—The driver of a Southern Railway electric train on the London-Dartford line died from injuries he received when his train collided with a stationary steam locomotive at Mottingham, Kent, on March 19. Two passengers were taken to hospital with concussion.

L.M.S.R. Grand National Arrangements.

—The L.M.S.R. announce that in order to avoid congestion at Liverpool Lime Street Station, a relief train will be run from Euston direct to the Aintree Racecourse Station for the Grand National on April 5, 1946. The train will leave Euston at

7.50 a.m. and will be due at the Racecourse Station at 12.45 p.m.; returning from the same station at 5.20 p.m., due at Euston at 10.10 p.m. The L.M.S.R. will also run relief trains to Aintree from Birmingham, Manchester, Leeds, Bradford, Blackpool, Oldham, Colne and Chester.

Colonial Government Appointment.

An assistant accountant is required by the Sierra Leone Government Railway for one tour of 12 to 24 months with possible permanency. Among other qualifications candidates must have had at least seven years' experience in the Accountant's Department of a British or Colonial railway. See Official Notices on page 367.

"Locomotive Limitations."

—The annual general meeting of the Institution of Locomotive Engineers will be held on April 10 at 5.30 p.m. in the Hall of the Institution of Mechanical Engineers, Storey's Gate, London, S.W.1. Mr. Julian S. Tritton, Vice-President, will deliver the Sir Seymour Biscoe Tritton Lecture; his subject will be "Locomotive Limitations."

G.W.R. South Wales to Manchester Service.

—For the convenience of business men, the G.W.R. has instituted as from March 25 a new through weekday service from South Wales to Manchester. The train leaves Cardiff at 8.30 a.m., Newport 8.49 a.m., Hereford 10.20 a.m., Shrewsbury 11.45 a.m., and Crewe 12.41 p.m.; and arrives Wilmslow at 1.10 p.m., Stockport 1.22 p.m., and Manchester London Road 1.36 p.m.

Simplified Green Line Timetables.

—Timetables on all London Transport Green Line coach routes, which are being restored as rapidly as the return of the necessary number of staff permits, are greatly simplified. The times at which coaches call at any given point are so arranged that they are always at the same number of minutes past each hour throughout the day and are, therefore, easy to remember. For example, on Route 704 (Tunbridge Wells to Windsor), on

which there is a 30-min. service, coaches call at Victoria (Eccleston Bridge) at 23 min. and 53 min. past each hour throughout the day; and on route 723 (Grays to Aldgate), where there is a 15-min. service, coaches call at East Ham Town Hall at 10, 25, 40, and 55 min. past each hour between 5.55 a.m. and 10.25 p.m. This practice will be followed on all new Green Line routes to be introduced during the coming months.

British Welding Research Association.

The offices of the British Welding Research Association have been removed from 2, Buckingham Palace Gardens, London, S.W.1, to 29, Park Crescent, London, W.1 (telephone, Welbeck 7485-9). Communications for the Institute of Welding, however, should be addressed to the Secretary, Institute of Welding, 2, Buckingham Palace Gardens, London, S.W.1.

Turkish Purchasing Mission.—A mission of the Turkish Department of Communications is visiting Great Britain and the U.S.A. to purchase locomotives, railway wagons, and other railway material, as well as ships and naval building equipment. The delegation includes railway and naval technicians, and it plans to place big orders during the tour.

L.M.S.R. Hotel Bureau for Industrialists.

—On March 19 the L.M.S.R. opened at the Midland Hotel, Manchester, a bureau staffed by transport representatives, who are available to give advice on all matters connected with internal and export transport. It is open from 8.0 a.m. to 8.0 p.m., Mondays to Fridays, and from 8.0 a.m. to 2.0 p.m. on Saturdays. The bureau, which is located in the foyer of the hotel, is in direct touch with the L.M.S.R. offices in Manchester, so that the whole of the L.M.S.R. resources of information and experience are available.

Additional G.W.R. Suburban Trains.

The G.W.R. announces that, as from March 25, a new evening train leaves Paddington for Windsor at 9.10 p.m. each weekday, calling at Ealing Broadway at 9.20 p.m., West Drayton 9.33 p.m., Slough 9.43 p.m., and due Windsor at 9.51 p.m. In addition the 9.52 p.m. Reading to Slough weekday train is extended to Paddington, leaving Slough at 10.41 p.m., calling at Langley at 10.45 p.m., Iwer 10.49 p.m., West Drayton 10.54 p.m., Ealing Broadway 11.9 p.m., and due Paddington at 11.22 p.m. The 8.40 p.m. Paddington to Windsor will terminate at Slough.

Provident Mutual Life Assurance.—The Provident Mutual Life Assurance Association publishes an interesting notice in this issue. At the end of 1942 this Association decided to postpone its distribution of profits because of the circumstances then prevailing. A declaration of bonus is now made not only in respect of the past three years, but for the whole period of eight years since the last distribution of profits at the end of 1937. The period covered by the declaration has been very difficult for insurance companies which have had to invest new money at low rates of interest and submit to a high rate of taxation. The rates of bonus compare favourably with other insurance companies, and the balance sheet shows an exceptionally strong position.

Snacks at L.N.E.R. Stations.

A new range of 50 varieties of snacks can now be obtained at 26 refreshment rooms on the L.N.E.R. in London, Manchester, Liverpool, Warrington, Chester, and the Eastern Counties. The number of refreshment rooms at which they will be on sale is to be increased every week. Prices

New Electric Tea Trolley at Waterloo, Southern Railway



On March 21 the Southern Railway introduced at Waterloo Station an electrically-driven, stainless-steel and enamel tea trolley. It is driven by two 24-volt batteries and is the first of 12 for use on the Southern Railway

vary from 3d. for scrambled egg on toast or salmon on toast, to 1s. for a ham and tongue double-decker sandwich. Since their appearance at Marylebone, the demand there for snacks has trebled. In addition, an improved blend of tea (50 per cent. Ceylon and 50 per cent. Indian) has recently been introduced in L.N.E.R. refreshment rooms.

G. D. Peters & Co. Ltd.—After deduction of E.P.T., the profit of G. D. Peters & Co. Ltd. for 1945 was £72,590, as against £50,704 in 1944. A final dividend of 7½ per cent., plus a special bonus of 2½ per cent., is declared, making a total distribution of 17½ per cent. as in the preceding year.

L.N.E.R. Sugar Beet Traffic.—The L.N.E.R., which serves 15 of the 18 sugar beet factories in Great Britain, carried over a million tons of beet in 114,458 wagons during the season just completed. Lifting operations were greatly facilitated by the favourable weather experienced, there being very little frost and much less rain than in recent years. In the area served by the L.N.E.R. 20,000 Italians and 15,000 Germans were employed in the harvesting.

L.N.E.R. (Extension of Time) Order, 1946.—The Minister of War Transport has made the London & North Eastern Railway (Extension of Time) Order, 1946 (S.R. & O., 1946, No. 279), extending by three years the time limited by section 6 of the London & North Eastern Railway Act, 1935, as extended by the London & North Eastern Railway (Extension of Time) Orders, 1940 and 1943, for the completion of certain railways at Ipswich and Wood Green. Copies of the Order may be obtained from the Clerk of Stationery, Minister of War Transport, Berkeley Square House, London, W.1, price 1d. (post free, 2d.).

Southern Railway Extension of Time Application.—The Southern Railway Company is applying to the Minister of War Transport for an Order under the Special Enactments (Extension of Time) Act, 1940, extending as from October 1, 1946, by three years in the case of certain works, and by two years in the case of certain lands, the time now limited by the Southern Railway (Extension of Time) Order, 1943 (S.R. & O., 1943, No. 1425). A copy of the draft application may be inspected at the office of the Solicitor, Southern Railway Company, Waterloo Station, London, S.E.1, from whom copies may be obtained at the price of 6d. each, and to whom any representations against the application must be submitted not later than April 8.

L.P.T.B. Experiments with Ticket-Issuing Machines.—The London Passenger Transport Board, which is searching for the ideal ticket-issuing machine for road-service vehicles, aims at a portable, light, compact automatic machine which will issue rapidly tickets of a number of different denominations and will record the number issued and the money paid. Several types of machines, some which issue serially numbered pre-printed tickets, others which print and issue at the same time, have been tried over a period of years. The latest model to be tried (four machines are under test on route 85. Putney Bridge to Kingston) weighs about 5 lb., is capable of issuing pre-printed tickets at a rapid rate, and is similar in operation to the machines generally used in ticket booths at cinemas. Five slots are provided, from which tickets of five

denominations (1d., 1½d., 2d., 3d., and 5d.) are issued by the touch of a small lever opposite each slot. For fares of 4d. and 6d., "twin" 2d. and 3d. tickets are ejected by the pressing of a button. The machine records the total number of tickets and of "twin" tickets issued.

Emu Bay Railway.—The Emu Bay Railway Company, Melbourne, is paying 2 per cent. on account of 1945 to holders of the £130,900 4½ per cent. irredeemable debenture stock. The company owns 88 miles of 3-ft. 6-in. track in Tasmania.

Agreed Charges.—Applications for the approval of 42 further agreed charges under the provisions of section 37 of the Road & Rail Traffic Act, 1933, have been lodged with the Railway Rates Tribunal. Notices of objection must be filed on or before April 5.

Great Western of Brazil Debentures.—The Great Western of Brazil Railway Co. Ltd. announces that the interest on debenture capital in respect of the half-year ended December 31, 1944, will be paid on April 4. Warrants will be posted on April 3 to all holders of permanent 6 per cent. debenture stock registered prior to March 21, 1946. Coupon No. 68 of the 4 per cent. debentures, which fell due on January 1, 1945, will be paid on April 4 on presentation to Glyn, Mills & Co., 67, Lombard Street, London, E.C.3.

Wagon Finance Corporation Limited.—At the annual meeting of the Wagon Finance Corporation in London, on February 21, the Chairman, Mr. W. Humble, said the company now owned 18,400 main-line wagons. The future of privately-owned wagons remained obscure, but in the meantime the common pool continued and compensation for the use of their wagons remained satisfactory. The company received its fair share of the available wagon business during the year. The board was convinced that the future of their company lay in the financing of road vehicles of all kinds, machinery, plant, and so on. Steps had been taken to increase the turnover in this direction through their subsidiary, Union Transport Finance Limited. The report and accounts were adopted, and the resolution to pay a dividend of 10 per cent., less tax, was carried.

Machine Tools & Measuring Instruments.—An exhibition of machine tools, and of processes in precision manufacture and measurement, was opened at the main works of the Coventry Gauge & Tool Co. Ltd., Fletchamstead Highway, Coventry, on March 25 by Lt.-General Wrisberg, Director-General of Munitions Production, Ministry of Supply* & Aircraft Production. The exhibition will remain open for several weeks. Arrangements are being made for visits by parties from scientific institutes and others interested in technical development, as well as by those concerned with home and export trade. The Coventry Gauge & Tool Co. Ltd. was the only British concern to develop and manufacture equipment for certain specialised and complicated wartime requirements, including components for the rotor blades and bodies of jet-propulsion engines.

L.N.E.R. Track Renewal and Station Repainting.—During 1946 nearly 579 miles of L.N.E.R. line is completely or partially to be renewed, including the laying of an additional 20 miles of flat-bottom track. Also, over 300 passenger stations, goods depots and other buildings are to be repainted. Roofing glass removed soon after the outbreak of war as a safety measure is to go back, and the work of

restoration has already been started at Kings Cross and Edinburgh (Waverley). Repainting work alone will cost nearly £250,000. Among the stations in the L.N.E.R. programme are included Kings Cross (Suburban), Newark, Retford, Lincoln, Grimsby, Manchester (London Road), Ely, Colchester, Ipswich, Darlington, Durham, Newcastle (Central), Glasgow (Queen Street) and Dunfermline.

Beira Railway Results.—This system, which is worked by Rhodesia Railways Limited, earned £421,484 net in the year

British and Irish Railway Stocks and Shares

Stocks	Highest 1945	Lowest 1945	Prices	
			Mar. 26 1946	Rise/ Fall
G.W.R.				
Cons. Ord.	60½	47½	55	—
5% Con. Pref.	124½	104½	111	—
5% Red. Pref. (1950) ..	107½	101½	103	—
5% Rt. Charge	137½	120	126½	—
5% Cons. Guar.	135½	117	121½	—
4% Deb.	118	106	112	—
4½% Deb.	119½	108	112½	—
4½% Deb.	124½	111½	117	—
5% Deb.	138	124	127	—
2½% Deb.	83	74½	84½	+ 1
L.M.S.R.				
Ord.	33	23½	28	+ ½
4% Pref. (1923)	65	50	54½	—
4% Pref.	80½	69½	76	—
5% Red. Pref. (1955) ..	106½	99½	101½	—
4% Guar.	106½	97	101½	—
4% Deb.	110½	102	106	—
5% Red. Deb. (1952) ..	110½	103½	106½	—
L.N.E.R.				
5% Pref. Ord.	8½	5½	6	—
Def. Ord.	4½	2½	3	—
4% First Pref.	62½	49½	53½	—
4% Second Pref.	33½	24½	28½	—
5% Red. Pref. (1955) ..	103	96	97	—
4% First Guar.	104½	95	98	—
4% Second Guar.	97	89½	90	—
3% Deb.	91½	82½	90½	— ½
4% Deb.	109½	101	106	—
5% Red. Deb. (1947) ..	103½	100	100 xd	— 1
4½% Sinking Fund Red. Deb.	106½	103	103½	—
SOUTHERN				
Pref. Ord.	79½	63	74½	+ ½
Def. Ord.	27	20½	22½	—
5% Pref.	124½	104	110½	—
5% Red. Pref. (1964) ..	117	107	108½	—
5% Guar. Pref.	135½	117	121½	—
5% Red. Guar. Pref. (1957)	117	106½	108½	—
4% Deb.	117	104½	111	—
5% Deb.	137	124	126½	—
4% Red. Deb. (1962- 67)	112	104½	106½	—
4% Red. Deb. (1970- 80)	113½	104	107½	—
FORTH BRIDGE				
Ord.	106	103	103	—
4% Guar.	106	101	102	—
L.P.T.B.				
4½ "A"	125	117	123½	—
5% "A"	135	127	133½	—
3% Guar. (1967-72) ..	100	97½	102	—
5% "B"	125½	115	117½	—
"C"	70	58	56	— 1
MERSEY				
Ord.	37	31½	31	—
3% Perp. Pref.	72½	68½	71	—
4% Perp. Deb.	104½	104	103	—
3% Perp. Deb.	84	78½	81	—
IRELAND*				
BELFAST & C.D.				
Ord.	8½	6	7½	—
G. NORTHERN				
Ord.	34	24½	38	—
Pref.	52½	42½	59½	+ 3½
Guar.	80	68	85½	—
Deb.	97½	87½	101	—
IRISH TRANSPORT				
Common	—	—	17/10½	—
3% Deb.	—	—	101	— ½

* Latest available quotation

OFFICIAL NOTICES

Crown Agents for the Colonies

COLONIAL GOVERNMENT APPOINTMENTS.

APPLICATIONS from qualified candidates are invited for the following post—

ASSISTANT ACCOUNTANT required for the Sierra Leone Government Railway for one tour of 12 to 24 months with possible permanency. Salary: £400, rising to £720 a year. On salary of £400 local allowance is £48 and separation allowance between £84 and £204 according to dependants. Outfit allowance, £60. Free quarters and passages. Candidates, not over 35, must have had at least seven years' experience in the Accountant's Department of a British or Colonial Railway, be experienced in goods and coaching audit work and be familiar with the preparation of Revenue and Expenditure accounts and returns and with the preparation and use of Traffic Statistics.

Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, to the Crown Agents for the Colonies, 4, Millbank, London, S.W.1, quoting M/N/15953.

CIVIL ENGINEERING ASSISTANTS (Senior and Junior), experienced in surveying and levelling, design of structures, railway layouts, contract documents and bills, etc., required by Main Line Railway Company.

Engagements on temporary basis at from £7 7s. to £10 10s. per week, plus War Advance (at present 28s. per week), according to qualifications and experience.—Applications, stating age, experience, etc., with copies of recent testimonials, to Box No. 293, c/o *The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

A WORKS MANAGER required for a large Locomotive Building and General Engineering Works in India. Applicants must be fully qualified mechanical engineers, having held senior executive positions in large works, with experience of works management and practical knowledge of present-day production methods. Preference will be given to those with good experience in locomotive building. Age 35 to 45. Salary: £2,000 to £2,500 per annum according to experience. Payable in Rupees. Three years' contract.—Apply, stating age, with full particulars of training and experience, to Tata Limited, 18, Grosvenor Place, London, S.W.1.

ended September 30, 1945, as against £470,008 in the preceding year. After a distribution of 2s. a share, the same as in 1943-44, less income tax at 10s. in the £, the carry-forward is £41,771, compared with £42,791 brought in.

Improvements at Dunfermline Upper Locomotive Depot, L.N.E.R.—The L.N.E.R. is to improve the facilities for coaling, turning and servicing engines at its Dunfermline Upper Locomotive Depot. New equipment to be installed includes a mechanical coaling plant of 250 tons hopper capacity, and a 70-ft. articulated turntable capable of dealing with modern locomotives. In addition to an improved track layout, an existing building will be adapted for the accommodation of workshops and stores; staff amenities will be improved by the erection of a new building containing messroom, lavatories, and a room for ambulance and mutual improvement classes.

Associated Electrical Industries Limited.—The net profit for 1945 was £542,817, as compared with £467,543 in 1944. A dividend of 10 per cent. is declared on the ordinary shares for the tenth year in succession. The company is offering an additional £1 ordinary at 50s. a share to holders registered on March 30 in the proportion of one for every five shares held. The amount involved by the issue is approximately £2,461,000. The present authorised capital is £5,161,950, of which £4,921,838 has been issued. An increase of capital will therefore be necessary for the new issue. The company's £1 ordinary shares are at present quoted at 62s.

G.W.R. Station Gardens Competition.—Gardening enthusiasts among the staff at hundreds of G.W.R. stations are busying themselves in their spare time preparing for the company's Station Gardens Competition, which has been organised this year for the first time since 1940. During the war years, the railway encouraged the staff to grow vegetables instead of flowers, but it is felt that travellers will now welcome a partial return, at least, to the attractive floral displays of pre-war. No prize will be given, however deserving the garden may be, unless the platforms, offices and waiting rooms have been kept clean and tidy and the work of the station is performed in a satisfactory manner. Before the war the Station Gardens Competition proved very popular and resulted in keen rivalry among the staff concerned. Some 500

stations in the London area, Home Counties, South and West England, the Midlands and Wales participated annually.

Hukuang Railways Sinking Fund Gold Loan.—The Hongkong & Shanghai Banking Corporation has given notice that bonds for £291,320 of Chinese Government 5 per cent. Hukuang Railways Sinking Fund Gold Loan of 1911 were drawn on December 4, 1945, at its London Office, 9, Gracechurch Street, E.C.3, in the presence of an officer of the Corporation and of Mr. William O. Brown, of the firm of John Venn & Sons, Notary Public; and in terms of the loan agreement become due for redemption at par on June 15, 1946. Redemption, however, will be subject to the provisions of the Chinese Government's offer published in London and elsewhere on April 5, 1937; and interest thereon will cease to accrue on the bonds becoming payable, and on provision having been made for their payment. Printed lists of the numbers of the bonds drawn may be obtained on application at the above address.

Contracts and Tenders

Morrison, Marshall & Hill, machine tool and woodworking machinery engineers, have moved back to the City from their wartime address at Kingston-on-Thames. The new address is 44-45, Tower Hill, E.C.3 (telephone: Royal 1461).

Below is a list of orders placed recently by the Egyptian State Railways:—

A. Cohen & Co. Ltd.: White metal.
J. Browett-Lindley (1931) Limited: Browett-Lindley air compressor.
Tilley Lamp Company: Silence buttons.
Westinghouse Brake & Signal Co. Ltd.: Signalling material.
Davies & Metcalfe Limited: Locomotive material.
British Metallic Packings (1939) Co. Ltd.: Locomotive material.
Vacuum Brake Co. Ltd.: Locomotive material.
C. C. Wakefield & Co. Ltd.: Hose clips, bushes, etc.
Imperial Chemical Industries Limited: Chemicals.
F. W. Berk & Co. Ltd.: Chemicals.
Morgan Crucible Co. Ltd.: Grinding wheels, etc.
Carborundum Co. Ltd.: Grinding wheels, etc.
Turrett Grinding Wheel Co. Ltd.: Grinding wheels, etc.
Universal Grinding Wheel Co. Ltd.: Grinding wheels, etc.
John Holdsworth Limited: Morquettes.

TECHNICAL ENGINEER, with experience in the preparation of electrical traction control schemes, design of apparatus, and the handling of contracts. Good practical experience and technical education essential, but anyone having industrial D.C. experience would be considered. Salary, £500 to £600 per year.—Box No. 63, c/o *The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

THE "PAGET" LOCOMOTIVE. Hitherto unpublished details of Sir Cecil Paget's heroic experiment. Eight single-acting cylinders with rotary valves. An application of the principles of the Willans central-valve engine to the steam locomotive. By James Clayton, M.B.E., M.I.Mech.E. Reprinted from *The Railway Gazette*, November 2, 1945. Price 2s. Post free 2s. 3d.

THE RAILWAY SYSTEM OF JAMAICA. A general description of the system and its traffic, with an account of economic problems; the motive power used; and some features of operation. By H. R. Fox, B.Sc., M.Inst.C.E., General Manager, Jamaica Government Railway. Reprinted from *The Railway Gazette*, January 5 and 12, 1945. Price 1s. Post free 1s. 2d.

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Forthcoming Meetings

April 4 (Thu.).—The Southern Railway Lecture & Debating Society, Chapter House, St. Thomas's Street, London Bridge, S.E.1. 5.45 p.m. "Some Thoughts on Transport Education and Training in the United Kingdom," by Mr. J. A. R. Turner, A.M.Inst.T., Chief Civil Engineer's Department. Mr. Henry Brooke, Deputy Chairman, will preside.

April 5 (Fri.).—The Institution of Railway Signal Engineers, at the Institution of Electrical Engineers, Savoy Place, Victoria Embankment, London, W.C.2. 6 p.m. "Upper Quadrant Signals." Paper by Mr. R. S. Griffiths (W.B. & S. Co.).

April 9 (Tue.).—The Institution of Civil Engineers, Gt. George Street, Westminster, London, S.W.1. 5.30 p.m. "Considerations involved in Renewals of Permanent Way," by Mr. H. C. Orchard, Assoc.M.Inst.C.E.

Railway Stock Market

After last week's sharp reaction on international politics, stock markets made a general recovery on Monday with a sharp upswing in Anglo-Iranian Oil and other shares which were weak features a week ago. Best levels have not been maintained, business in most sections failing to expand, a waiting attitude predominating, particularly in view of the forthcoming Budget. British Funds recorded a good rally accompanied by continued talk of a big new Government loan operation, but caution became the keynote in the industrial section where it is realised that the Budget decisions can have an important bearing on trade recovery. A better tendency was in evidence in the iron, steel and kindred groups; Guest Keen, Tube Investments and Babcock & Wilcox recorded moderate gains, and Vickers made further improvement in the belief that the report, which on this occasion will include consolidated accounts, will show a particularly strong position.

Home rails remained notably steady with only small fractional movements and prices have been well maintained on balance. Although the Bill for transport nationalisation has been forecast at an early date, there is an impression that in view of the big problems and varied interests involved in a plan of this kind, actual nationalisation of the railways in fact may not be carried into effect until next year and that there may therefore be prospects of dividends for the current year at around the improved rates for last year.

It is true, of course, that part of last

year's payments may have to be regarded as bonuses, but revenue available for dividends may again benefit from withdrawals from contingencies reserves, particularly if there is a satisfactory settlement as to abnormal wear and tear and other matters arising from wartime operations. Apart from considerations of this kind, however, there is growing confidence that railway stockholders are entitled to fair and even liberal treatment in respect of nationalisation terms, bearing in mind all factors, particularly the right of the railways to standard revenue as defined in the 1921 Act; and that nationalisation terms should be based on more generous lines than either dividends permitted under the fixed rental agreement or the average dividends paid over the past twenty years. With yields on industrial shares still tending downwards, the large yields on home railway junior stocks have an even more fantastic appearance.

Consequently it is held that if nationalisation terms are reasonable there may be scope for good appreciation in prices above current levels. Sentiment is affected by the fact that on so many occasions in the past the reasonable hopes of stockholders have been disappointed; but in the matter of nationalisation compensation there seems every reason to believe that a strong and unanswerable case can be made for terms which would make current market prices much undervalued.

After an earlier decline, Great Western rallied and at 55 was the same as a week ago, and the 5 per cent. preference strengthened to 111 and the 4 per cent. debentures were maintained at 112. L.M.S.R.

gained $\frac{1}{4}$ at 28, the senior preference held at 76 and the 1923 preference at 54 was within $\frac{1}{2}$ of the level a week ago; the 4 per cent. guaranteed stock moved higher at 192. Demand was in evidence for L.N.E.R. second preference, which after 28, firmed up to 28 $\frac{1}{2}$, and the first preference at 53 $\frac{1}{2}$ was well maintained; the 3 per cent. debentures, however, eased to 90 $\frac{1}{2}$.

Southern deferred at 22 $\frac{1}{2}$ fully re-preferred attracted buyers in view of the big yield and attention drawn to the good dividend over a long period of years; at 75 the price was a point higher on balance. London Transport "C" remained out of favour, and at 56 was a point lower. There would be a big yield on the basis of the standard dividend rate of 5 $\frac{1}{2}$ per cent.; but on the current rate of dividend the yield is well below that on junior stocks of the main-line companies.

National Railways of Mexico stocks responded to the debt settlement plan, but later receded on strong criticisms of the terms and the opposition expressed by the Council of Foreign Bondholders. Argentine rails recorded small indefinite movements, a waiting attitude predominating because the future will be bound up with the attitude of the Argentine Government. There was, however, selective buying of debenture stocks of the leading companies. Buenos Ayres Great Southern 4 per cent. debentures strengthened to 62, and Buenos Ayres Western 4 per cent. to 58, but Central Argentine debentures eased, the 4 per cents receding to 55 $\frac{1}{2}$. Elsewhere, Antofagasta preference reacted, and San Paulo ordinary stock was a point down at 51.

Traffic Table and Stock Prices of Overseas and Foreign Railways

Railways	Miles open	Week ended	Traffic for week		No. of Week	Aggregate traffic to date			Shares or Stock	Prices		
			Total this year	Inc. or dec. compared with 1944/5		Totals		Increase or decrease		Highest 1945	Lowest 1945	Mar. 26 1946
						1945/6	1944/5					
South & Central America												
Antofagasta	834	17.3.46	£ 36,250	+ £ 13,720	11	£ 361,980	£ 334,730	+ £ 27,250	Ord. Stk.	12	8½	9½
Arg. N.E.	753	16.3.46	ps. 313,900	+ ps. 28,700	37	ps. 10,976,100	ps. 10,992,100	+ ps. 15,200	"	10	5½	5½
Bolivar	174	Feb. 1946	4,380	- 615	8	9,206	10,638	- 1,432	6 p.c. Deb.	25	17	25½
Brazil	2,771	16.3.46	ps. 2,582,000	- ps. 68,000	37	ps. 83,590,000	ps. 79,119,000	+ ps. 4,471,000	Ord. Stk.	7	5	6
B.A. Pacific	5,080	16.3.46	ps. 4,781,000	+ ps. 825,000	37	ps. 129,664,000	ps. 123,004,000	+ ps. 6,660,000	Ord. Stk.	13½	10½	9½
B.A.G.S.	1,924	16.3.46	ps. 1,284,000	+ ps. 95,000	37	ps. 44,622,000	ps. 41,960,000	+ ps. 2,662,000	"	12½	9½	9½
B.A. Western	3,700	16.3.46	ps. 3,446,267	+ ps. 515,067	37	ps. 116,240,717	ps. 107,229,250	+ ps. 9,011,467	"	9½	7	7
Cent. Argentine Do. ...	970	16.3.46	43,207	+ 8,960	37	1,430,401	1,258,824	+ 171,577	"	5	2½	3
Cent. Uruguay	262	Jan., 1946	25,528	- 28	30	195,192	146,887	+ 48,305	Ord. Stk.	7½	4	6
Costa Rica	70	Feb., 1946	28,065	+ 1,388	8	59,814	58,605	+ 1,209	1 Mt. Deb.	103	102	101
Dorada	808	16.3.46	ps. 471,200	+ ps. 97,800	37	ps. 15,764,200	ps. 14,634,600	+ ps. 1,129,600	Ord. Stk.	7½	4½	6
Entre Rios	1,030	16.3.46	31,000	+ 3,600	11	351,000	306,200	+ 44,800	Ord. Stk.	30½	23½	20½
G.W. of Brazil	794	Jan., 1946	\$1,024,547	+ \$293,377	4	\$1,024,547	\$731,170	+ \$293,377	"	—	—	—
Inter. Ctl. Amer. ...	22½	Feb., 1946	5,607	+ 584	8	12,429	10,517	+ 1,912	5 p.c. Deb.	78	70	63
La Guaira	1,918	16.3.46	57,486	+ 6,553	11	614,517	495,977	+ 118,540	Ord. Stk.	4½	3½	3
Leopoldina	483	14.3.46	ps. 927,100	+ ps. 316,900	10	ps. 8,539,700	ps. 6,363,600	+ ps. 2,176,100	Ord. Stk.	—	—	—
Mexican	319	Feb., 1946	12,941	- 5,801	33	147,430	138,980	+ 8,450	"	—	—	—
Midland Uruguay ...	382	15.3.46	10,542	+ 4,966	10	47,699	27,778	+ 19,921	Ord. Sh.	75½	67½	76½
Nitrate	113	Feb., 1946	3,791	- 911	32	44,609	45,207	- 598	"	—	—	—
N.W. of Uruguay ...	274	15.3.46	£ 56,196	+ £ 9,233	37	£ 2,237,610	£ 2,195,142	+ £ 42,468	Pr. Li. Stk.	79½	77	75½
Paraguay Cent. ...	1,059	Feb., 1946	138,395	+ 21,244	34	1,134,456	1,032,102	+ 102,354	Pr. Pref.	10½	7½	10
Peru Corp.	100	Jan., 1946	c 234,000	+ c 41,000	28	c 847,000	c 751,000	+ c 96,000	—	—	—	—
Salvador	153½	—	—	—	—	—	—	—	Ord. Stk.	60½	50½	52
San Paulo	156	Feb., 1946	5,315	+ 3,230	34	24,490	20,045	+ 4,445	Ord. Sh.	17½	10½	16½
Talca	1,301	17.3.46	96,170	+ 17,569	37	1,905,051	1,939,385	+ 34,334	Ord. Stk.	3	1	—
United of Havana ...	73	Feb., 1946	1,477	- 436	33	14,090	12,457	+ 1,633	"	—	—	—
Uruguay Northern ...	Canada											
Canadian National ...	23,569	Jan., 1946	6,180,200	- 333,400	4	6,180,200	6,513,600	- 333,400	—	—	—	—
Canadian Pacific ...	17,037	21.3.46	1,184,200	+ 14,000	11	12,650,600	12,878,800	- 228,200	Ord. Stk.	24	14½	24½
Various												
Barsi Light†	202	Feb., 1946	30,465	+ 10,365	45	278,032	243,082	+ 34,950	Ord. Stk.	131	123	115½
Beira	204	Jan., 1946	69,229	- 8,862	16	274,482	314,277	- 39,795	"	—	—	—
Egyptian Delta	607	22.2.46	18,343	- 2,696	39	514,206	570,041	- 55,835	Pr. Sh.	10	8½	7
Manila	—	—	—	—	—	—	—	—	B. Deb.	71	55½	71½
Mid. of W. Australia ...	277	Jan., 1946	17,786	- 1,859	28	118,260	139,946	- 21,686	Inc. Deb.	97½	85	85
Nigeria	1,900	Jan., 1946	364,084	- 31,234	42	2,794,107	3,133,455	- 339,348	"	—	—	—
Rhodesia	2,445	Jan., 1946	491,378	- 15,492	16	2,009,946	2,068,980	- 59,034	"	—	—	—
South African	13,301	23.2.46	1,015,836	+ 7,532	50	47,739,779	43,734,644	+ 4,005,115	"	—	—	—
Victoria	4,774	Nov., 1945	1,252,024	- 55,618	—	—	—	—	"	—	—	—

† Receipts are calculated @ 1s. 6d. to the rupee